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Fortnightly Review

Encouraging

AS THIS is written the aircraft and aircraft engine manufacturing industry has received the word that gives it a new lease on life—award of record peacetime contracts by the War Department totaling \$85,978,000.

The outlook is bright. A more satisfactory profit arrangement is now in force and most factories are ready to start production on a large scale within a very short time. Following recent record-breaking flights which showed that U. S. four-engine bombers are as good as and probably better than any in the world, it is good news indeed to see that close to \$22,000,000, or over 25% of the total awards, are to go for that type of ship. Air Corps officials also have indicated that the twin-engine bombers, amply provided for in the orders, performed surprisingly well in Wright Field tests.

For some years the United States has treated its manufacturers of military aircraft very shabbily. Some companies have managed to do very well, but they have done so in spite of the procurement system rather than because of it.

The War Department today can expect from our manufacturing industry production facility and efficiency far surpassing that of any nation in the world, but ironically enough this production efficiency of 1939 and 1940 is largely made possible by foreign countries. Export business has been the difference between profit and loss in almost every company, if indeed there has been a profit at all. Had it not been for exports, the U. S. aircraft manufacturing industry would be in a sorry plight today. The War Department knows that it can contract for 200 to 500 air-

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\$85,978,000 Record Peacetime Plane, Engine Contracts Let

BRIG. GEN. ANDREWS ON GENERAL STAFF

First Air Corps Representative to Serve As Division Head

Important boost for the Air Corps was announced Aug. 4 when it was revealed that Brig. Gen. Frank M. Andrews, first commander of the GHQ Air Force and air officer of the 8th Corps Area, had been assigned as assistant chief of staff, G-3, for operations and training, War Dept. general staff.

This is the first time that an ex-Air Corps officer has been assigned to head one of the five divisions of the general staff, and Air Corps officers and other officials regard such recognition as being of outstanding importance.

The five divisions of the general staff are personnel, military intelligence, operations and training, supply and transportation, and war plans. In his position, Brig. Gen. Andrews will have charge of organized training, troop movements, and numerous other activities. He succeeds Maj. Gen. Robert McC. Beck Jr., who will

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Promoted



Brig. Gen. Frank M. Andrews
Ex-Air Corps Officer who has been assigned as Assistant Chief of Staff for operations and training.

G. L. Martin, P&W High in Air Corps Awards; Remainder of Orders To Be Revealed Soon

The largest peacetime orders for airplanes and engines in the history of the aviation industry were revealed Aug. 10 when the War Dept. announced tentative awards totaling \$85,978,000, with the largest plane contract of \$15,815,000 going to Glenn L. Martin Co. and the largest engine award of \$12,320,000 to Pratt & Whitney Div. of United Aircraft Corp.

Announced just at press time, the \$85,978,000 was divided \$64,113,000 for planes and \$21,865,000 for engines. The War Dept. stated that, including other government-furnished equipment for which separate contracts will be let, the total value represented in the present tentative awards is more than \$100,000,000.

As usual, the Air Corps withheld all information concerning the number of planes and engines involved. Other details of the plane awards are approximately as follows:

Four-engine bombardment planes—Consolidated Aircraft Corp., San Diego, Cal., \$8,485,000; Boeing Aircraft Co., Seattle, Wash., \$8,090,000; options to the same firms, \$5,400,000.

Twin-engine bombardment planes—Glenn L. Martin Co., Baltimore, Md., \$15,815,000; North American Aviation Inc., Inglewood, Cal., \$11,771,000.

Advanced training planes—North American Aviation Inc., \$1,326,000.

Basic training planes—North American Aviation Inc., \$2,707,000; Vultee Aircraft Div., Aviation Manufacturing Corp., Downey, Cal., \$2,986,000.

Primary training planes—Boeing Airplane Co., Stearman Div., Wichita, Kan., \$688,000; option to same firm, \$2,000,000.

Twin-engined interceptor pursuit—Lockheed Aircraft Corp., Burbank, Cal., \$4,845,000.

The engine awards are approximately as follows:

United Aircraft Corp., Pratt & Whitney Div., Hartford, Conn., \$12,320,000; Wright Aeronautical Corp., Paterson, N. J., \$7,000,000; Allison Engineering Co., Indianapolis, Ind., \$2,275,000, and Lycoming Div., Aviation

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CAA Takes Drastic Step; Asks Dept. of Justice to Prosecute 8 Pilots

Following recent announcement of its intention to clamp down on violators of the Civil Air Regulations, the CAA on Aug. 5 forwarded to the Dept. of Justice, for whatever action that agency may deem advisable, evidence in the cases of eight pilots, including an Eastern Air Lines captain, who are said to have consistently ignored registered communications requesting either the presentation of evidence to disprove the charges or offers of compromise on fines to which they were liable, if they were unable to pay the full amounts.

By far the most drastic step taken to date, it was the first time since the federal government began regulating aviation in 1926, that the Dept. of Justice has been requested to prosecute violators of the CAR.

It was the opinion of the Authority that the public interest requires the initiation of judicial proceedings against the following:

Capt. G. W. Bransom, Newark, N. J., holder of airline pilot certificate No.

1917, while acting as pilot of Eastern Air Lines, on Feb. 3, failed to maintain a listening watch on company frequency and could not be contacted by the airway traffic control tower from 8:22 p. m. until 8:53 p. m.

Theo. T. Brown, Inglewood, Cal., holder of commercial pilot certificate No. 5168, navigated a plane on a civil airway, and in taking off from Los Angeles Municipal Airport failed to observe the local field traffic rule in refusing to obey instructions from airport control tower. He also navigated a plane from the same airport in weather below the minimum prescribed for contact flight. Brown did not have a valid instrument rating, and the plane was not properly equipped for instrument flight.

Harold A. Hutt, Van Nuys, Cal., solo pilot certificate No. 49807, navigated a plane on a civil airway in weather below the minimum prescribed for contact flight without being possessed of a valid instrument rating.

Richard Cavin, Springfield, Mo., student pilot certificate No. 50534, navigated a plane on a civil airway with a person aboard other than a certificated instructor.

Herbert M. Ostrow, Long Beach, N. Y., private pilot certificate No. 59216, flew a

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State Fair Providing No-Cost Exposition

A no-cost exposition for aircraft and accessory manufacturers will be held at the New York State Fair in Syracuse from Aug. 26 to Sept. 9, officials having set aside more than 100,000 sq. ft. of outdoor displaying space in addition to 10,000 sq. ft. in the fair's main building for accessory exhibits. It is believed the aviation show will be one of the most comprehensive exhibitions of the industry ever attempted in the east.

Plans for the exhibit have been laid out by a committee appointed by Paul Smith, fair's director, and under the supervision of Robert E. Fowler, advertising manager of Aircooled Motors Corp., Syracuse. Additional members of the aviation committee are Harold E. Cobb, Eugene W. Walrath, James E. Walsh, Harry W. Ward and Charles E. Flaherty, all of Syracuse.

One day, Aviation Day, will be devoted solely to the industry. A state air tour has been designed to terminate in Syracuse on opening day.

MOODYS SMASH MARK

Decatur, Ill., Flyers Remain Aloft in Taylorcraft for 343 Hrs. 43 Min.

Piloting a special Taylorcraft powered by a dual ignition 55-hp. Lycoming engine, Hunter and Humphrey Moody, Decatur, Ill., airmen, set a new world's endurance flight record for light planes at 343 hrs. 43 min., before grounding the plane Aug. 6, almost 13 days short of the heavy plane mark of 653 hrs. toward which they were aiming. The previous record for light planes was 218 hrs. 43 min., set last year by Clyde Schleiper and Thomas and Harley Long, of Long Beach, Cal. The heavy plane endurance mark is held by Al and Fred Keys, of Meridian, Miss.

The Moody brothers cruised their *Miss Springfield*, a specially prepared craft without upholstery or headlining, within a 30-mile radius of the Springfield, Ill., airport.

Trippe Touring Europe

Graham Trippe, president of Trippe Manufacturing Co., Chicago, and inventor of the two-reflector Trippe safety light, is traveling in Europe in an attempt to interest aviation officials of foreign governments in a portable airport lighting system. A development of the Trippe company, the system comprises 20 lights, powerful enough to illuminate a landing field 1,000 ft. in length and 200 ft. wide. Complete layout weighs about 600 lbs. and can be transported in an airplane or truck.

Sayre to CAA

Daniel Sayre, associate editor of "Aviation" magazine, has been appointed director of statistics and information for the CAA, effective Aug. 18. He takes the position which has been vacant since C. B. Allen, former chief, was named third member of the Air Safety Board. John Stuart, chief of the information division, remains in his present capacity.

Sykes to Washington

Lloyd Sykes, chief meteorologist for Penn-Central at County Airport, Pittsburgh, for two years, recently expected to take a position with the Arlington weather station which provides data for Washington Airport.

Livestock Protection

A bill prohibiting pilots from handling planes "in such a manner as to frighten livestock" has been introduced in the Montana legislature. Sen. Robinson declared that plane-incited stampedes "have often seriously affected the market value" of cattle by causing the animals to lose weight.

Calendar

- Aug. 14-17—Wisconsin Air Tour, leaving Stevens Point.
- Aug. 19—National Aviation Day.
- Aug. 19-20—Annual Air Meet, Hyannis (Mass.) Airport.
- Aug. 20—Dedication of Dove Field, Geneva, N. Y.
- Aug. 20-21—Annual Air Show, Sheldon Aeronautics Club, Sheldon, Ia.
- Aug. 25-27—3rd Annual Maine Aero Rendezvous, Augusta State Airport.
- Aug. 26-27—Dedication of Chicago and Gilder Council's field, between Wheaton & Glen Ellyn, Ill.
- Aug. 26-Sept. 9—Exposition for Aircraft & Accessory Mfrs., N. Y. State Fair, Syracuse.
- Aug. 27-Sept. 5—American Open Soaring Meet, Frankfort, Mich.
- Sept. 2—King's Cup Race and Wakefield Trophy Race, Birmingham, England.
- Sept. 2-4—National Air Races, Cleveland.
- Sept. 3—Gordon Bennett Balloon Race, Poland.
- Sept. 3—Annual Meeting, 99ers, Cleveland.
- Sept. 4—Aero Club of the Republic of Poland International Competition for Gordon Bennett Cup, Warsaw.
- Sept. 4-8—ASME & Inst. Mech. Eng. of Great Britain, Meeting on Mechanical Problems of Modern Transport, New York.
- Sept. 10—3d Annual Air Show, sponsored by Rocky Mountain NAA Chapter.
- Sept. 11-17—International Congress of the Aeronautical Sciences, I. Ae. S., Columbia University, New York.
- Sept. 11-24—Air Progress, Sponsored by NAA.
- Sept. 13-15—International Air Traffic Association Meeting, New York.
- Sept. 15—Sioux Falls (S.D.) Municipal Airport Dedication.
- Sept. 15—I. Ae. S., Dinner to Delegates, 12 International Congress, New York.
- Sept. 16—International Aviation Day, New York World's Fair.
- Sept. 17—2nd Annual Air Show, Thunderbird Aviation Club, Ponca City, Okla.
- Sept. 22-23—Western Aviation Planning Conference, Fresno, Cal.
- Sept. 23—Kansas City Municipal Air Terminal Dedication.
- Sept. 23-24—Annual Air Show, sponsored by Pampa (Tex.) Junior Chamber of Commerce.
- Sept. 23-24—9th Annual Air Show, Willows, Cal.
- Oct. 1—Deutsch Cup Race (speed), Etampes, France.
- Oct. 2-17—3d International Aeronautical Show, Milan, Italy.
- Oct. 5-7—Northwest Aviation Planning Council, Olympic Hotel, Seattle, Wash.
- Oct. 5-7—SAE National Aircraft Production Meeting, Los Angeles.
- Oct. 12-14—NASAO Annual Convention, Hotel Roosevelt, New Orleans.
- Oct. 16-20—National Safety Congress and Exposition, Atlantic City.
- Oct. 26-27—SAE Transportation & Maintenance Meeting, Coronado Hotel, St. Louis.
- Nov. 3-7—Annual Convention, Aeronautical Medical Association, Hollywood-by-the-Sea, Fla.
- Dec. 7-8—Kansas State Aviation Association, Annual Meeting, Wichita.
- Dec. 16—I. Ae. S. Wright Brothers Lecture, New York.
- Dec. 27-Jan. 2—AAAS Winter Meeting, Columbus, O.
- Jan. 5-7—All-American Air Maneuvers, Miami.
- Apr. 26-28—Air Congress of America, Southwest Division, Tulsa.

NY Revives Squadron

New York City's aviation bureau of the emergency service division of the police dept. has been revived with the delivery of two Stinson Reliants powered by 450-hp. Wright Whirlwinds, one a landplane and one a seaplane. Inspector Arthur Wallander heads the emergency service division and Deputy Inspector Henry Mallet is second in command while Sgt. Joseph Forsythe is in direct charge of the unit. Other members of the flying squadron are Patrolmen-Pilots John P. Hellebrand, J. Q. Friedman, Albert B. Tenzer, Gerald J. Crosson and Gustav Crawford; and Patrolmen-Mechanics Arthur P. Walz, Walter G. Reichman, Samuel Leonowich, Walter C. Kolm, Michael J. Fabia and Michael L. Wellandt.

99ers Meet Sept. 3

Annual meeting of the 99ers will be held in Cleveland on Sept. 3 where many of the organization's members will be attending the 1939 National Air Races, Sept. 2-4.

Salesman



Carl B. Squier

Genial vice president in charge of sales of Lockheed Aircraft Corp., and often referred to as America's international aviation salesman No. 1 because of the world-wide use of Lockheed airplanes.

McDonald and Catron Take Over Tennessee Commission Activities

Percy McDonald of Memphis recently was elected permanent chairman of the Tennessee Aeronautics Commission, it was learned, concurrent with the announcement of the release of Maj. Walter Williams as director. Lieut. William Catron of the 105th Observation Squadron, Tennessee National Guard, was appointed director, and G. J. Paulie of Jackson was appointed state director of airports. Paulie succeeds Haywood Norman, former asst. director of the commission. All changes were effective Aug. 1.

Salaries were revised, McDonald said, and a sharp adjustment downward was made in the \$4,800 salary paid Williams. Norman received \$2,400. It is understood that Catron and Paulie will receive about \$3,000 each. The job of director of airports, held by Paulie, WPA engineer, was created in mid-July.

Abandonment of Tennessee's publicized free training schools in favor of a program of airport improvement also was announced by McDonald. "As soon as we have completed training the 75 students now getting flight instructions we will go in for improvement of airports on regular airlines," he said.

Williams' dismissal was said to have been anticipated by observers for several months. He became director in Jan. 1938, and devised and instituted the civilian training program at state expense. Several hundred citizens have received free ground school training.

Broker Circles Earth

Norman C. Lee, New York broker, recently became what was said to be the first fare-paying passenger to circumnavigate the globe completely by air. Lee flew via United to San Francisco where he made connections with the China Clipper to Honolulu and the Orient. From Hong Kong he flew to Bangkok, Siam aboard an Imperial Airways liner, thence to Athens on a Netherlands KLM plane and again by Imperial Airways to Marseilles, where he caught the westbound Atlantic Clipper to New York.

Sullivan With Ad Agency

Miss Marie C. Sullivan, formerly with the women's division of North American Aviation Inc. and Eastern Air Lines, is associated with the promotion and public relations dept. of Erwin, Wasey & Co. Inc.

ICAes Delegates to Meet Sept. 11-15

With delegates from 50 foreign countries, as well as from foreign universities, laboratories, and aeronautical organizations, the International Congress of the Aeronautical Sciences will meet in New York from Sept. 11 through Sept. 17. Sponsored by the Institute of the Aeronautical Sciences, the Congress will on Sept. 15 offer special tribute to the aeronautical contributions of the Wright brothers. As part of the Congress, Sept. 16 has been designated "International Aviation Day" by the New York World's Fair.

Program, as announced tentatively, opens Sept. 11 with registration of delegates at Columbia University and a reception at the Waldorf-Astoria Hotel.

Technical sessions begin Sept. 12 at the University, the subjects being aerodynamics, engines, and air transport.

Aircraft design, meteorology, radio and instruments occupy the program on Sept. 13, while the following days' topics for discussion are aerodynamics, physiological problems, and structures.

Preceding the Sept. 15 banquet at the Waldorf-Astoria, at which time delegates will present letters of recognition to the Wright brothers are sessions on propellers, fuels and lubricants.

Saturday, Sept. 16 is "International Aviation Day" at the Fair. Activities of the Congress conclude Sept. 17 with a lawn party for delegates at the Aviation Country Club, Hicksville, L. I., N. Y.

SPA GOVERNORS CHOSEN

Association Announces Officials for 1939-40; Seven New Members Listed

State governors of the Sportsman Pilots Association for 1939-40, announced recently, follow:

Alabama, Harold F. Wood; California, Henry King; Connecticut, R. D. W. Vroom; Delaware, H. B. DuPont; Florida, F. J. Sones; Georgia, H. T. Cole; Indiana, D. B. Lindsay; Kansas, Walter C. Beech; Louisiana, W. J. Ryan; Maryland, C. H. Warrington; Massachusetts, H. L. Kirkpatrick; Michigan, Cass S. Hough; New Jersey, D. A. Luscombe; North Carolina, W. C. Olsen; Pennsylvania, J. D. Burnham; Rhode Island, W. M. Smart; West Virginia, J. B. Pierce; Wisconsin, J. L. Vette; District of Columbia, Harrison Somerville; Canada, F. H. Wheeler.

Tie votes, necessitating a re-ballot, were recorded in Illinois, Missouri, New York, Ohio and Texas.

Governors at large are T. B. Colby, Cal.; D. M. Giltinan, W. Va., and Mrs. J. T. Remy, N. Y.

H. A. L. Barker, of Washington, D. C., is general counsel.

New members of the association are Bill Lear, New York; Lou Huck, Detroit; C. R. Lontz, Richmond, Ind.; Harry Playford, St. Petersburg, Fla.; J. A. Wells, Southbridge, Mass.; John Bromley Jr., Philadelphia; R. L. Quinn, Philadelphia.

SAE Meeting Site Changed

An aircraft engineering display will be a new feature of the SAE National Aircraft Production Meeting in Los Angeles, Oct. 5-7. John A. C. Warner, SAE secretary and general mgr., announced recently when he disclosed that the site of the meeting will be in the Hotel Biltmore instead of the Ambassador Hotel as originally contemplated. J. H. Kindelberger, president, North American Aviation, Inc., heads the committee under whose auspices the display will be operated. Mac Short, president, Vega Airplane Co., is general chairman for the meeting as a whole.

Exit the Gulls

Toronto, Ont., July 31—Officials of Toronto Island Airport have discovered a method of freeing runways of seagulls which have been roosting on the field and creating a hazard to aircraft. A motorcyclist was ordered to ride continually around the field, sprinting at birds attempting to settle on runways.

CAA Gets \$4,000,000 for Pilot Training as Congress Closes

3rd Deficiency Bill also Appropriates for NACA Lab, New Zealand Mail Service, Army Air Bases

Adjournment of the 1st session of the 76th Congress on Aug. 5 was highlighted by the passage of the third deficiency bill in the closing hours, carrying \$4,000,000 for the CAA's pilot training program, \$10,000,000 for an NACA laboratory, funds for air mail service to New Zealand, and other aviation items, mostly of a military nature.

In this first session, which was admittedly national defense-minded, the CAA's pilot training program was kicked around considerably before final passage. As it now stands, the Authority will be able to train approximately 11,000 pilots instead of the 20,000 originally contemplated. The program narrowly missed being cut to 7,500 students when the House voted only \$3,000,000, but the Senate restored the amount to \$5,675,000, and the conference on the last deficiency measure compromised at \$4,000,000.

History of this legislation, the most important bill in the first session as far as private flying was concerned, shows that the CAA originally asked \$9,800,000 to train 20,000. This money however, contained \$2,500,000 for advanced flying, and the Bureau of the Budget cut the estimate to \$7,300,000. The House and Senate-approved authorization found the figure at \$5,675,000 for 15,000 pilots, and there it remained until the \$4,000,000 appropriation was made on the last stormy day.

NACA Gets Lab

Although the National Advisory Committee for Aeronautics was on record for a research laboratory at Sunnyvale, Cal., Congress, because many of its own members as well as other officials favored other locations, appropriated \$10,000,000 and gave the Committee 30 days in which to hear suggestions and pick its own site. As appropriated, the NACA gets \$1,890,980 to start construction, plus \$8,109,020 contract authorization. Originally, the Committee had recommended that these figures be \$4,000,000 and \$6,000,000, respectively.

One of the surprises, not only of the third deficiency bill but of the entire session, was the fact that the Post Office Dept. received \$900,000 for Pan American Airways' proposed service to New Zealand via Canton and New Caledonia. Pan Am had filed application for the route with the CAA only a few days before consideration of the bill, and it was hardly expected that the economy-minded Congress would approve mail pay for the line. Twice-monthly service is contemplated with mail compensation of approximately \$7 per mile.

Also received by the Post Office was \$1,419,520 to provide for a full year's trans-Atlantic service, and \$713,200 to pay increases in domestic air mail rates granted by the Interstate Commerce Commission and the CAA. These funds as finally passed were the same as originally requested by the PO.

Army Air Bases

For construction at military air bases, the Army was given \$8,431,300 plus contract authorization of \$8,500,000. This will include installation of buildings and facilities at the following posts: completion of Alaskan air base, \$400,000; Patterson Field, \$1,970,000; Duncan Field, Tex., \$1,970,000; Southeast Air Depot, \$7,275,000; Frankford Arsenal, \$418,400; Ft. Monmouth, \$220,000; Savannah Ordnance Depot, \$952,000; Ogden Air Depot, \$3,515,900; Camp Stanley, Tex., \$210,000.

Already, \$3,600,000 had been appropriated towards completion of the Alaskan base. The sum for Patterson and Duncan Fields, which serve as general repair depots, are necessary to serve the increased activities resulting from the aviation expansion program. The War Dept. hopes that work at these depots can be completed coincident with the procurement of airplanes and organization of new Air Corps units.

In connection primarily with the national defense, the CAA also received \$300,000 for the Ketchikan-Anchorage-Fairbanks-Nome airway in Alaska, operation of trans-Atlantic radio stations,

Pacific radio communications and weather reporting stations. The House in particular stressed the defense angle of this appropriation.

The Coast Guard, which had requested \$300,000 plus \$2,233,000 contract authorization for a base and air station at Kodiak, Alaska, was turned down cold as Congress declared that the project was "not of immediate importance."

Because the legislators felt that there was no immediate national emergency, the Treasury Dept.'s request for \$25,000,000 to purchase strategic and critical materials during the fiscal year 1940, was cut to \$10,000,000. "The probabilities are that if large stock piles of foreign-produced materials were built up now, when no pressing demand exists therefor, there would ensue a lessened interest in the development of domestic sources of supply," the House Appropriations Committee said.

Airship Ignored

The much-debated item of a rigid airship for the Navy was discarded when Congress refused to appropriate \$300,000 plus \$1,700,000 contract authorization for this purpose. Only money received by the Navy was \$568,860 for pay to aviation cadets.

Only aviation funds contained in the deficiency measure for the State Dept. was \$16,000 for expenses in connection with the 2nd Inter-American Radio Conference, to be held at Santiago, Chile. Disallowed were requests for expense funds for the 4th World Conference, Aeronautical Radio Telegraph, Berlin, and the International Radio Consulting Committee, Stockholm.

With regard to the number of minor aviation bills, some of which never got out of committee, it must be remembered that all legislation retains its status, so that the measures are far from dead and may be passed by the 2d session of the 76th Congress.

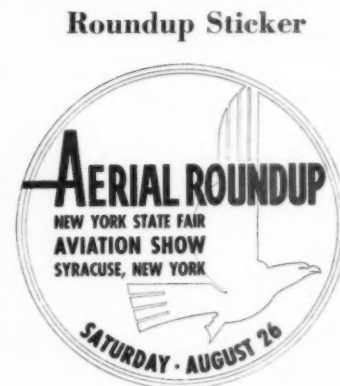
Pilot Training Plans Progress; Cut Instructor Insurance, Medical Fee

Following appropriation by Congress on Aug. 5 of \$4,000,000 for the pilot training program, the CAA announced that it was ready to proceed with the selection of colleges and universities, revealing that formal application blanks have already been sent out to several hundred institutions.

No definite statement has been given on just how many pilots the \$4,000,000 will train, but it is learned that, at a per-student cost of \$270-290, officials are confident that the number will be at least 11,000.

One of the most important and significant announcements in connection with the program was made Aug. 8 when it was revealed that the National Council on Compensation Insurance has cut in half the rates to be charged on pilot compensation for instructors engaged in the program. Formerly, operators have been forced to pay \$1.50 per hour for insurance on their instructors while giving dual instruction. The rate has now been lowered to 75c per hour and will result in a saving of over \$150,000 to the operators in the CAA program.

The Council, composed of representatives of various insurance companies, which is authorized to set rates, stated that the reduction was being made because instructors will be subject to fewer hazards under the CAA program. The rate is retroactive to July 1. Officials also expect that the reduced rate will have a great effect on private flying in general. This is due to the fact that the 11,000-pilot program is expected to attract possibly that many more students to learn to fly on their own, and it is possible that, if these latter students were subject to the same controlled conditions as exist in the CAA program, their instructors



Aviation club and private plane owners in the east have been invited to participate in an aerial roundup to culminate in Syracuse on Aug. 26 in connection with the aviation show at the NY State Fair, Aug. 26 to Sept. 9. More than \$500 in trophies and cash prizes will be awarded for special events in connection with the roundup. It is estimated that about 150 planes, carrying the above sticker, will land at Syracuse Airport on the fair's opening day.

Legal Decision

An airplane trip does not constitute "participation in aviation" according to a U. S. Circuit Court of Appeals ruling in Cincinnati, O., recently. The decision upheld a \$5,000 judgment awarded to Mrs. Helen Bayersdorfer, of Steubenville, by Federal Judge Mel G. Underwood in Columbus. The judgment was against the contention of Massachusetts Protective Ass'n Inc., that a clause in the insurance contract precluded a claim issuing from the death of Stanley W. Bayersdorfer in a TWA crash Apr. 7, 1936, at Uniontown, Pa.

Action Foreseen On Airport Survey At Next Congress

At the press conference held Aug. 8 by CAA Chairman Robert Hinckley on the Authority's first birthday anniversary, Member Edward Warner stated that he had unofficial information that the airport survey may be due for Congressional action at the next session, which begins in January.

The summary of the CAA's first-year activities stated: "The airport survey ordered by Congress has been completed and the volume represents the most comprehensive study of the relationship of the airport to the airway and to the community it serves that has ever been made. Though no specific action was taken by Congress this year on the recommendation for the allocation of relief funds specifically to airport work, it is believed that under the present arrangement of the Federal Works Administration considerable progress can be made with airport development during the current year along the lines which enable the Authority to supervise the construction or improvement of airports by WPA assistance in previous years."

"An important phase of the work in connection with this airport survey was the collection of photographic records of 560 take-offs and landings of aircraft of various sizes and classifications. Due to this study it was possible to standardize on the requirements for runway length, airport dimensions and the zoning of approaches against obstructions. These standards have already been followed in the creation of new airports and the improvements of existing ones."

50 New TWA Co-Pilots

TWA has taken on 50 new co-pilots since Mar. 1. It was announced recently by Otis Bryan, chief pilot of the line. Most of these were ex-service flyers. TWA's training school for pilots is under the direction of Joe Mountain, an expert in Link trainer tests, with Capt. Henry Diltz and Capt. Stanley Kasper, regular pilots, instructing students in the line's operations.

Gen. Andrews

(Continued from page 1)

retire on his own application on Oct. 31, 1939, after over 42 years' service.

Shortly after being graduated from the U. S. Military Academy, Gen. Andrews was sent to the Philippine Islands where he served with the 8th Cavalry from Nov. 14, 1906 to Apr. 15, 1907. Upon his return to the U. S., he was assigned to duty at Fort Yellowstone, Wyo., to Nov. 26, 1908, and at Ft. Huachuca, Ariz., to Oct. 19, 1910. He then served at Ft. Meyer, Va., to Nov. 10, 1910, when he was ordered to Hawaii.

Gen. Andrews attended Air Corps Tactical School, Langley Field, Va., and upon graduation remained at Langley where he served with the 2d Wing Headquarters, until July 16, 1928. He attended the Command and General Staff School, Fort Leavenworth, Kan., to June 30, 1929, and after graduation was assigned to duty in the office, chief of Air Corps, to Aug. 15, 1932. Gen. Andrews then attended the Army War College, Washington, from which he was graduated on June 30, 1933. He commanded the 1st Pursuit Group and Selfridge Field, Mich., to Oct. 10, 1934, and then returned to duty with the War Dept. General Staff, this time serving with the operations and training branch, in connection with the reorganization of the Air Corps and later as acting commander of the proposed GHQ Air Force, until Feb. 28, 1935.

Upon the organization of the GHQ Air Force on Mar. 1, 1935, Gen. Andrews assumed command, in which capacity he served until Mar. 1939. He was then ordered to Ft. Sam Houston, Tex., as air officer of the 8th Corps Area.

PCA, AA Equipment Burns

Radio equipment owned by American Airlines and Pennsylvania-Central Airlines near Buffalo (N. Y.) Airport was destroyed by fire recently with an estimated damage of \$10,000. Communication between the port and incoming planes was disrupted.

CAA Marks First Anniversary; Reviews Year's Accomplishments

Chairman Hinckley Holds Press Conference; Is Satisfied With Record; Points to Aviation Growth in Past 6 Months

On Aug. 8, one year after the CAA members, the Administrator and the Air Safety Board took their oaths of office, Chairman Robert Hinckley held his first press conference and issued a comprehensive statement dealing with the first year's accomplishments.

Present at the press meeting to answer questions propounded by newspaper and magazine representatives were the other four members of the Authority, Administrator Clinton Hester and Air Safety Board members Col. Sumpter Smith, Tom Hardin and C. B. Allen.

"On this first anniversary I think that my colleagues on the Authority, the Administrator and the Air Safety Board can look with a good deal of satisfaction upon what has been accomplished, particularly in view of the indubitable fact that during the last six months activities in all phases of aviation have increased enormously beyond anything we could have rea-

installed to make those aids to navigation independent of the failure of commercial power lines; (15) four new airway traffic control stations have been established at Ft. Worth, St. Louis, Salt Lake City and Atlanta, and areas controlled by other traffic stations extended until 12,165, or 45% of the entire airways, are subject to traffic control; (16) new radio frequencies have been allocated and a new system of collecting and disseminating weather reports has been provided; (17) aircraft movements increased from 293,000 in 1938 to 375,000 in 1939, a gain of 28% for the year; (18) the CAA has installed and is now service-testing ultra-high frequency radio ranges operating at 63 and 125 megacycles at Indianapolis and Pittsburgh; specifications were prepared and contracts let for completely equipping the Chicago-Newark airway with ultra-high; (19) contracts have been let for three units of a new and approved type of ground direction finder; (20) decision on the selection of a blind landing system is to be made shortly.

More accomplishments of the

CAA Box Score

(As of July 31)

	Filed	Decided	Heard but Not Decided	Assigned For Hearing
"Grandfather" applications	36	24	2	9
New route applications	59	1	10	22
Amendments (for new services)	20	..	1	8
Permits to foreign carriers	6	..	3	..
Air mail rate cases	16	6	8	1
Interlocking relationships	48	3	2	3
Miscellaneous cases	8	2	1	2
	190	36	27	45

sonably contemplated when we began our task," Mr. Hinckley said.

The written review of the first year's work issued by Mr. Hinckley contained the following highlights: (1) 26,144 pilots now hold certificates, 6,000 more than a year ago, an increase of 30%; (2) there are 11,160 certificated planes, 1,400 (15%) more than a year ago; (3) "even without the Authority's own pilot training program, the curves show that there would be 36,000 certificated pilots by the end of 1940, and 43,000 by the end of 1941. Taking into account the student pilot training program, the number of pilot certificates in force by the end of 1941 ought to approximate 70,000 of all classes."

Continuing, the statement pointed out that (4) federal airways in the U. S. have been increased by about 10% in length to a total of over 25,000 miles, and aids to navigation along these airways have been increased by about the same amount; (5) the U. S. flag now flies in the air from Nome to Buenos Aires and from Hong Kong to Marseilles; (6) all air mail carriers have "grandfather" certificates; (7) of 16 air mail rate cases filed, six have been decided, eight have been heard and are awaiting decision, and one (American) has been postponed at the carrier's request; (8) of 59 new route applications, one has been decided (Wichita-Pueblo), 10 are pending and 22 have been assigned for hearing; (9) for the year ending July 8, 1939, there have been only three fatal airline accidents, killing one pilot, a new safety record.

Also, (10) in carrying out the remainder of the two-year project authorized by Congress to commence on July 1, 1937, leases were negotiated for 1,572 sites on new airways, including beacons, landing fields, radio stations, control quarters, rights of way, power line easements, etc., for new airways, and 279 for change in existing airways; (11) 80 new simultaneous radio range and communication stations, half of them replacing obsolete stations, were constructed, as were 29 medium and low-powered loop type range and communication stations; (12) 21 ultra-high frequency fan markers have been installed, together with 100 ultra-high frequency cone of silence markers, at radio range stations; (13) 1,868 miles have been added to the teletypewriter circuits for weather communication stations.

Hinckley's statement added that (14) almost 200 independent gasoline or Diesel generating plants have been procured, and 26 actually have been

Authority were (21) "studies and tests have been made of the effect of fatigue oxygen deprivation upon pilot efficiency. Safe fuel dumping systems have been devised. New types of airport approach and other aeronautical lights have been tested. Bad weather wind direction data are being gathered at 200 airports. Development of a photographic record of the instruments in the pilot's cockpit has continued, as have service tests of the airport orientator. Numerous conferences, national and international, have been attended on airport design, medical research, lighting, radio and other developments. A medical station has been established at Kansas City along with a radio experimental station at Indianapolis, and both have been equipped, staffed and launched on comprehensive studies of work."

(22) California Institute of Technology is performing a structural research study for the aircraft airworthiness section, which also is cooperating with the NACA, Army and manufacturers.

In addition, (23) all instructors are being re-rated; (24) medical exams have increased 36.5% in number over last year, as 56,198 reports were received and action taken. Only 2% of applications for student pilot certificates were denied for failure to meet physical requirements; (25) 38 Authority inspectors have taken the instrument flight training course, including Link trainer instruction, to keep abreast of current practices; (26) requirements for sworn oaths or affidavits on 21 forms were eliminated, which will save the industry \$100,000 yearly in notary fees; (27) a simplified recordation of airplane sales has been devised; (28) the Safety Board has investigated and analyzed more than 1,000 accidents and has made 80 formal recommendations. At least one model of aircraft in airline use has been modified and another distinctly revised in structure as a result of the Board's recommendations.

The international division (29) has received 29 applications for certificates. Negotiations in which the division has a part are now pending with France, Canada, Norway, Poland,

(Turn to page 9, col. 4)



Just one year ago, in extending formal welcome to the members of the newly created Civil Aeronautics Authority, our company expressed the belief that there was beginning a new era in air transportation. This, we felt, was to be an era characterized by sounder principles of air regulation, more constructive economic development of the industry, improved service to the benefit of the traveling public, and finally, increased volume of passenger and cargo traffic over the domestic lines of the United States.

Now, as we pause to extend good wishes to the Civil Aeronautics Authority on the completion of its first year of service to the aviation industry, it seems evident that last year's prediction of a dawning new era has materialized. Whereas in 1938 the airlines of this country transported approximately 1,500,000 passengers, in 1939 the aggregate traffic on United States lines will approximate 2,000,000. This is indeed evidence that air transportation marches forward purposefully toward an ever-brightening future.

W. A. Patterson

President
United Air Lines



John Q. Public Explores Bomber

Part of a continuous stream of persons waiting their turn to inspect one of the Air Corps' B-17 "Flying Fortresses" at Wright Field, Dayton, O., on Aug. 2, 30th anniversary of the Army's first plane purchase.

(Staff Photo)



Air Corps Shows Strength; Holds Open House on Birthday

Most of the Army's air strength participated in exercises throughout the U. S. on Aug. 2 as the Air Corps celebrated the 30th anniversary of the purchase of its first airplane.

Unusual and impressive feature of the celebration was the "open house" held by the Air Corps at the Materiel Division, Wright Field, Dayton O. For the first time the general public was allowed to inspect certain types of bombers, pursuits and attack planes as the usual veil of secrecy was discarded. It is reported that upwards to 101,000 persons visited Wright Field.

The entire day's activities, which included the movement of a large number of planes, most of them to Wright Field, were carried out without a single accident of any kind. The record is particularly significant in view of the fact that there were sometimes as many as 75 to 100 planes in the air at once around Dayton.

Many distinguished persons, including Air Corps pioneers, manufacturers and air transport representatives, were present at the Wright Field celebration.

Air attachés of Great Britain, France, Germany, Italy and other countries also participated in the ceremonies as did CAA members and other government officials.

A dozen newspaper and magazine representatives from Washington were accorded the unusual privilege of riding to Dayton and back in B-17 "Flying Fortresses," while New York Journalists were given transportation in Douglas B-18 medium bombers. Writers also were taken aloft and given a demonstration of formation flying.

At the Wright Field luncheon, Maj. Gen. H. H. Arnold, chief of Air Corps, keynoted the celebration with the statement, "It's your Air Corps." He called attention to the fact that the world records broken by the Army recently were accomplished with standard equipment. Maj. Gen. Arnold presented Distinguished Flying Crosses to Maj. Carl Greene and Capt. Alfred Johnson for their work with the pressure cabin plane, and to Capt. George Holloman and Carl Crane for work with the Army's automatic landing system.

Air Corps Project Funds are Allotted

Allotment of funds to projects involving housing and Air Corps technical construction, amounting to a total of \$62,800,000 which was appropriated during the present session of Congress for the Air Corps expansion program, was announced on July 21 by the War Dept. This total is exclusive of WPA funds, a total of \$3,961,900. In addition, the sum of \$16,931,300 will be required for the remainder of the program.

War Dept. and WPA allocations go to the following Air Corps fields:

Maxwell Field, Alabama; Moffett, Hamilton and March Fields, California; Lowry Field, Colorado; Bolling Field, District of Columbia; Southeast Air Base, Florida; Chanute and Scott Fields, Illinois; Barksdale Field, Louisiana; Aberdeen Proving Ground, Maryland; Selfridge Field, Michigan; Mitchell Field, New York; Patterson and Wright Fields, Ohio; Frankford Arsenal, Pennsylvania; Duncan, Hensley, Kelly and Brooks Fields, Texas; Langley Field, Virginia; McChord Field, Washington; Northeast Air Base (location not yet announced); Alaska new air base (location not yet announced); Panama Canal Zone, including Albrook and France Fields, Corundu Military Reservation and new air base; Philippine Islands; Hawaii, including Hickam Field, Puerto Rico Air Base.

6th Canadian Boat Ready

With the launching of the "Stranraer," twin-engine flying boat at Canadian Vickers Ltd. plant at Maisonneuve, Canada, the sixth craft of this type was completed by the firm for the department of national defense. Craft is the largest to be built in the Dominion.

Pedler Completes 10 Years

James S. Pedler, manager of aeronautics of the B. F. Goodrich Co., Akron, O., recently completed 10 years of service with the organization and received his service pin from company officials. In charge of Goodrich aviation activities for the last five years, Pedler is an overseas veteran of the French and American Flying Corps, and a member of Quiet Birdmen.

Air Corps' Orgy of Record Breaking Coincides With 30th Anniversary

Timed to coincide with its 30th birthday celebration, held at Wright Field, Aug. 2, the Army Air Corps during the last week of July and the first two days of August embarked on an orgy of record breaking which saw six international and 15 national marks fall.

Boeing equipment—the "Flying Fortress" and "Super Flying Fortress"—was used in all but one record-smashing flight, as the Air Corps demonstrated to the world its superiority in the four-engine bomber class. It also was emphasized by Maj. Gen. H. H. Arnold, Air Corps chief, that all planes used were standard equipment and had not been "souped up."

The international marks broken were as follows:

1. Closed course speed record of 166.32 mph. average while carrying 2,000 kilograms (4,409 lbs.) payload for a distance of 3,107 mi., or 5,000 kilometers. Made in a Boeing B-15 "Super Flying Fortress." No other plane in the world had formerly qualified in this category.

2. High altitude record of 33,400 ft. with 5,000 kilograms (11,023 lbs.) payload. Made in a Boeing YB-17A "Flying Fortress." Former record with similar load was held by Germany with mark of 30,551 ft. in a Junkers JU-90.

3. Speed record of 259,398 average mph. over 1,000 kilometer course carrying 5,000 kilogram payload. Made in a Boeing YB-17A. Former mark of 251.878 mph. held by Italy.

4. High altitude record of 8,200 ft. with greatest payload (31,205 lbs.). Made in Boeing B-15. Former mark was 6,561 ft. with 28,660 lbs., carried by a Russian Maxim Gorky.

5. Los Angeles-New York course record of 9 hrs., 14 min., 30 sec. for planes carrying passengers or crew. Made with Boeing B-17B. Former record of 11 hrs., 5 min., 45 sec. held by D. W. Tomlinson in a Douglas DC-1.

6. Amphibian speed record of 186.094 average mph. for 1,000 kilometer course. Made with Wasp-powered Grumman OA-9 amphibian. Former mark of 159.8 mph. held by Italy.

The six world marks also constituted national records. The remainder of the national records broken include altitude marks with loads of 2,000 and 1,000 kilograms. These fell with the international record established for 5,000 kilograms payload. The old 2,000 kilogram record of 6,722 ft. was held by Lieut. H. R. Harris, Air Corps., in a six-engine Barling, while the 1,000 kilogram mark of 20,820 ft. was held by Waldo Waterman with a Bach plane. The other seven national marks fell when a B-17, carrying a load of 5,000 kilograms flew 1,000 kilometers at an average speed of 205 mph., and two laps of the course at an average of 200.12 mph. Records established were for speed for 1,000 kilometers with payloads of 1,000, 2,000 and 5,000 kilograms, for 2,000 kilometers without payloads, and for 2,000 kilometers with payloads of 1,000, 2,000 and 5,000 kilograms respectively.

7 SCHOOLS GET ARMY CONTRACTS

Mechanics' Training for 1,000 Students Provided in \$366,386.80 Award

Announcement of the awarding of contracts totaling \$366,386.80 to seven civilian schools for the training of airplane and engine mechanics for the Air Corps was made by the War Dept. on Aug. 6. Program calls for training 1,000 mechanics, in a series of eight 28-week courses, starting Aug. 7.

Contracts were awarded as follows: Curtiss-Wright Technical Institute of Aeronautics, Glendale, Cal., 272 students, \$101,836.80.

Casey Jones School of Aeronautics Inc., Newark, N. J., 200 students, \$73,324.

Roosevelt Field Inc., Aviation School Div., Mineola, N. Y., 200 students, \$69,658.

Aeronautical University Inc., Chicago, Ill., 120 students, \$46,080.

New England Aircraft School, East Boston, Mass., 80 students, \$30,720.

Spartan School of Aeronautics, Tulsa, Okla., 80 students, \$28,469.60.

Parks Air College Inc., East St. Louis, Ill., 48 students, \$16,298.40.

Launching of this program falls close on the recent announcement of contracts for certain phases of training of Army pilots in civilian air schools.

Civil schools for mechanics' training will augment the training now being given at the Air Corps Technical Schools, with branches at Chanute Field, Rantoul, Ill.; Lowry Field, Denver, Colo., and Scott Field, Belleville, Ill.

At these selected civilian schools training will be given only in the subject of "airplane mechanics," which includes instruction in operation, maintenance and repair of the plane and its engine.

All schools selected are rated "well qualified" by the CAA to give this training.

Here Comes Oscar



Dummy Oscar, attired in the Army aviator's uniform of the first decade of the 20th century, sits clasping the sticks of the Army's first airplane in commemoration of the 30th anniversary of the Air Corps on Aug. 2. Paul Garber, asst. curator in charge of the Smithsonian Institution's aircraft collection, is shown with Oscar in the plane built by the Wright Brothers, accepted by the government in 1909.

Ceremonies commemorating the anniversary were staged at the Wright plane in Smithsonian Institution on Aug. 2. A wreath was placed on the plane by Col. H. H. C. Richards, chief of the Air Corps information division, and Miss Alys McKay Bryant, member of the Early Birds and one of the first women flyers. (Harris & Ewing Photo.)





The Birdmen's Perch

LAST CALL!—They're almost all gone! This is our third and final announcement of the Gulf Aviation Atlas. The 5th edition—big, fat, and full of flying info, maps, charts, pictures, air history, etc.—is yours for the asking. You'll be glad you wrote for your free copy. Address—

MAJOR AL WILLIAMS, alias "Tattered Wing-Tips,"
Mgr. Gulf Aviation Products, Gulf Bldg., Pittsburgh, Pa.

MORE-FOR-YOUR-MONEY DEPT.



Get this straight. We don't claim for one second that our quarts are any bigger than the next guy's.

But we *do* solemnly aver that there's a darn sight more lubricating value per quart in Gulfpride Oil.

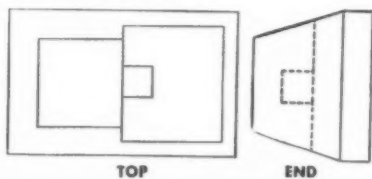
You see . . . Gulfpride is refined both by conventional methods and by the famous Gulf-patented Alchlor process. That's the technical triumph that burrows down still further into the 100% Pure Pennsylvania . . . *digests out more sludge and carbon-formers.*

T.W.T. PROJECT #3

Last month, after reading a stack of mail that had to be written on asbestos in re allegedly hard projection problems, we made a promise.

We guaranteed to find one that would fill padded cells by the gross. We found it all right. But so much space would be required to put it in print that The Whopper Club'd be crowded right off the page. In our capacity as Literary Editor, we couldn't let us, as Puzzle Potentate, do that.

So we rustled up another. One that may possibly take some of our heckling friends a moment or two more to work out. Nothing hard, however, fellas. (heh, heh!) Shouldn't take you any time at all to project that front view.



(Old T.W.T. is waiting for the answers. Send yours in and get our solution by return mail.)

THIS MONTH'S WHOPPER

Dear Al:

Now I have a bone to pick with Norman McEwen, a real raw bone. I'm a Floridian and I won't stand for any belittling of our Florida mosquitoes. Of course, Norm is right when he says they aren't as large as the California variety. Nothing in Florida is as large as in California. Not the seeds in the oranges, not the fog on the coast, not the frost, not the and-so-forth. But when it comes to calling our mosquitoes "Pygmies", that's a downright outrage! Libelous, I call it!



Why, I remember the time a broken control cable forced me down in the Everglades. The mosquitoes knocked me down the minute I wiggled out of the cockpit. Then they stuck in their hoses and began to drink. Say, boy, you know they have 3 separate stomachs and wobble pumps from one into the other. There's no bottom to them. I could see there was going to be no end to it if I didn't do something.

I gets up. I grabs a blade off the busted prop and carves a hole through this cloud of winged babies back to the cockpit. I pulls the closure over my head and slumps exhausted in the seat. However, there to my dismay sits a big, husky-looking old boy right on the instrument panel. He musta flown in after me. His hypodermic needle was as long as the lubber line on the



compass. He eyes me sourly for a minute. Then he opens his mouth and addresses me in perfectly good English. Says he, "Brother, I'm flight officer of this formation and I'll make a deal with you.

"It's like this," he says. "We're sick of eatin' Indians and you're the first white man we seen since Ponce De Leon. Now what we want is to git into Miami."

"But," I countered, "there's plenty of mosquitoes in Miami already."

"Yes," says he, "but *we* ain't there. And if *you* don't help *us* to git there, *YOU* ain't never



goin' to git there no more neither." And he glances meaningfully out at the crew what was already drilling holes in the icing glass. "I'm open to any proposition," says I. "That's better," says my Everglades Eagle. "That's better," says he and goes on. "You see it's like this" he grumbles, "me and the flight outside are pretty long-winded all right, but the 100-mile hop to Miami on the fuel we get in these swamps is just too much. So here's our proposition. If you'll unscrew the filler cap on your gas tank and let us fill up on G.A.G., we'll not only be able to make Miami nonstop ourselves but we'll hook our snouts together and build a stretcher for you to sit on and you can hitch hike right along with us."



"Can't be done," says I, "y'aint big enuf!"

"Ain't big enuf, heck!" he snorts. "You don't need *size* to git *strength* when your belly tanks is full of G.A.G.! Say, what kind of an ignorant pilot *are* you anyhow?"

"You win," I says, and pulls off the cap to the gas tank. In 3 minutes those mosquitoes had sucked my tank so dry it didn't even smell! In 3 minutes more they had woven a stretcher out of their snouts for me to sit on, and 3 minutes after that we were all sittin' on the Miami Municipal Airport, 100 miles away! If G.A.G. can put that speed into mosquitoes, what the deuce can it put into aircraft engines?

William W. Kane

Gulf Oil Corporation and Gulf Refining Company . . . makers of



GULF AVIATION PRODUCTS

Luscombe Completes 65's Seaplane Tests

Tests recently were completed on the Delaware River in Trenton, N. J., on the new all-metal Luscombe 65 equipped with Edo #1320 floats, it was announced by Luscombe Airplane Corp., West Trenton. At the same time it was learned that a new building has been completed at the Luscombe plant, shown at right in the accompanying photo, which houses



fuselage and wing assembly and sheet metal activities. Production at the plant has been tripled since May.

As a seaplane the new Luscombe has a gross weight of 1,260 lbs. with a useful load of 469 lbs. Empty weight is 791 lbs. Rate of climb, fully loaded, is over 700 ft. per minute and cruising speed is 95 mph. Baggage allowance is 37 lbs. Take-off from still water was made in 20 seconds.

The 65's fuselage is full monocoque of Alclad skins, the same corrosion-proof material used in the manufacture of Edo floats. Two doors are standard equipment which enables the pilot to use any docking facilities. Orders for four seaplanes for immediate delivery were announced.

During the first two weeks of July orders for 21 Luscombes were received. Company stated that mass production methods enable the manufacturer to step up production schedules to meet increasing demand, and all deliveries are being made on time.

Amphibian Base Purchased

Purchase has been reported of 600 acres near the mouth of the Choptank River in Dorchester County, Md. by L. R. Grumman, president of Grumman Aircraft Engineering Corp., and Leon Swirbul, vice president, for a price of \$30,000. An amphibian base at Taylor's Island is contemplated, it is believed.

Coupe Gets Seaplane TC

A type certificate recently was issued by the CAA to Piper Aircraft Corp., Lock Haven, Pa., permitting the sale and use of the Cub Coupe as a pontoon seaplane. Coupe is a deluxe two-place sportplane selling just below \$2,000.

Houston With DuPont Airport

Vincent Houston, 2nd lieutenant, 103d Observation Squadron, Philadelphia National Guard, has been employed by DuPont Airport, Wilmington, Del., as pilot-salesman and instructor.

Harlow Distributors Meet



territory. Allor will represent Harlow in New York. Other distributors are E. W. Wiggins Airways Inc. for New England; Harry Hamill of Austin, Tex., for the southwest; Frank Clark for northern California and Nevada, and John P. Fulton for southern California and Arizona.

Aero Groups

Dallas, Tex.—New officers of the Dallas chapter of WNAA are Mrs. R. S. LeSage, pres.; Mrs. Malvin Sellmeyer, Mrs. Bill Lind, v. p.s.; Mrs. Merle Brock, treas.; Mrs. Arthur Casey, secy. Directors are Mrs. Harold Byrd, Mrs. C. Pettitt, Mrs. Ray Shrader, Mrs. Richard Lowry, Mrs. Ben Bransom.

Dayton, O.—Committee chairmen of the Junior Association of Commerce Air Show are Kenneth Buckey, Lamont Rennels, P. H. Gates, Robert Dally, Jay L. Boyer, Edward Shoup, William Struck, Orvin Traver. Made plans for the annual air show held on July 23 at Dayton Municipal Airport.

Charlotte, N. C.—Mrs. Clayton Patterson of Charlotte, governor of the southeastern region of the 99ers, has announced that membership in the region has increased from four to 26 since 1936, when she became governor. Active members are Neil Foster Behr, Carroll Hood Boone, Lucille Brockenbrough, Maxine Dunlap Bennett, Mabel Griggs Clemson, Madeline Heckenbleiker Nichols, Charlotte Frye, Lucile Greenwood, Peggy Hagopian, Ann Reed Johnson, Nell McKee, Dorothy Monro, Crystal Mowry, Clayton Patterson, Agnes Pittman, Kaye Richardson, Vera Self, Zoe Audrey Stephens, Ruth Stillson, Jessie Woods.

Birmingham, Ala.—Recently elected officers of the Birmingham Aero Club follow: Luther T. Cale, pres.; R. L. Sims, v.p.; Milton Yelding, v.p.; Joe B. Norman, v.p.; E. W. Stanford, secy-treas.; Jeanette G. Laney, recording secy. Board of governors consists of Steadham Acker, Hayden Brooks, David E. Denney, Brown G. Hill, D. B. McCracken, Robert L. McRaney, Jim McCrory, Kathryn Oliver, B. A. Schroder, L. A. Tatum, P. Y. Whitman, W. J. Wise.

Washington, D. C.—Washington Flyers Club recently was organized with Norman E. Staley, ex-marine flyer, as president; Harvey H. Perkins, v. p.; "Sonny" Morrell, secy., 1421 Massachusetts Ave., N. W.; Kimball J. Scribner, treas.

Reading, Pa.—A new organization known as Reading Aviation Association was formed recently by 75 pilots, plane owners and student flyers from Berks County's three airports. Carl M. Sisk was elected president. Other officers are: J. Turner ("Jack") Moore, Jr., v. p.; Clifton O. Hadley, technical advisor of Municipal Airport, secy-treas. Among those who advanced objectives for the group are Ernest C. T. Bick, Francis M. Wilkinson, Brooks L. McElroy, Eddie Nibur, Mattie Long, Richard Estier, Carl Reber, Earl Savage, Clarence Rowe, Charles Madeira, Dr. Warren J. Stieff, Moore, Sisk and Hadley.

5 New Representatives

The following are new representatives of Taylorcraft Aviation Corp., Alliance, O.: Neal B. Scholl, Vancouver, Wash.; Narragansett Aviation Service Inc., Hills Grove, R. I.; Ralph L. Burton, Alliance, Neb.; Paul B. Shaw, Iowa City, Ia.; O. K. Grieder Inc., Paterson, N. J.

READY FOR ORDERS

Final Tests Are Made On Bellanca Junior, Model 14-9

Having successfully met all CAA requirements for a Type Certificate, Bellanca Aircraft Corp., New Castle, Del., announced recently that it is now in a position to take orders and make delivery on model 14-9, the Bellanca Junior. Gene Tyson, CAA inspector, made final tests at the factory and was assisted by Arthur Bussey, Bellanca test pilot.

A three-place full cantilever low-wing monoplane, the 14-9 has a maximum speed at sea level of 132 mph. Range is 420 mi. and service ceiling, 14,000 ft. Additional specifications follow: Overall length, 21' 3"; overall height, 6' 3"; wing span, 34' 2"; wing area, 140.2 sq. ft. Powerplant is Rears (LeBlond) 5F, five cylinder air-cooled, developing 90 hp. at 2,250 rpm. sea level; cowling is full NACA type and propeller is wood.

Fuel supply system—engine pump from wing tank; auxiliary hand wobble pump; capacity 20 gals. Oil capacity, 2 gals. Fuselage is of welded chrome-molybdenum steel tubing, fabric covered. Instruments include tachometer, altimeter, magnetic compass, air speed indicator, oil pressure, oil temperature gauge, fuel pressure gauge. (See AMERICAN AVIATION, May 15).

"This is the first time that an airplane in the size and price class of the Bellanca Junior has been offered with retractable landing gear as a standard item of equipment," H. L. Thompson of the sales dept. said in announcing the 14-9. "This feature is but an indication of the many advanced design features incorporated in this outstanding airplane," he said.

Aeronautical Charts

The U. S. Coast and Geodetic Survey, Dept. of Commerce, Washington, D. C., announced the following new editions of charts which cancel all previous editions. Pilots are warned against using obsolete charts.

New Editions of Sectional Aeronautical Charts

(All sectional charts are scaled at 1:500,000 and priced at 40¢ each, with a discount of 33-1/3% on orders, including assortments, grossing \$10 or more.)

EL PASO, July 1939. Size, 20 x 47". Located in latitude 30°-32° north and longitude 102°-108° west, an area of about 57,000 sq. mi. Includes new radio range at Columbus, N. M., and an accumulation of other changes.

LAKE HURON, June 1939. Size, 20 x 39". Located in latitude 44°-46° north and longitude 78°-84° west, an area of some 47,000 sq. mi. Addition of radio ranges at Muskoka Falls and from Killaloe, North Bay and Malton, with an accumulation of changes since last edition.

MINOT, July 1939. Size, 20 x 37". Located in latitude 48°-50° north, and longitude 96°-102° west, an area of about 45,000 sq. mi. Radio ranges at Rivers and Winnipeg added with an accumulation of other changes.

OKLAHOMA CITY, June 1939. Size, 20 x 45". Located in latitude 34°-36° north and longitude 96°-102° west, an area of some 56,000 sq. mi. Beacons added on the Amarillo-Ft. Worth lighted airway.

Canadian Map Available

A series of eight-mile maps of areas across the Dominion of Canada is being prepared for aeronautical purposes by the hydrographic and map service of the Department of Mines and Resources, Ottawa. The Cranbrook-Lethbridge map just issued covers an area from latitude 48° to 50° one-half of which extends into the U. S. A copy of the map is available for 25¢.

Onan Generating Plants

A new series of lightweight, aircraft type electric generating plants have been announced by D. W. Onan & Sons, 39 Royalston Ave., Minneapolis, Minn. Plants' output range from 1,000 to 7,500 watts in models OTA, OTC and TD. There are various voltages, 50 to 800 cycle alternating or direct current. The three models are heavy duty, two-cylinder, opposed, four cycle, air-cooled gasoline engine powered.

NAA Organizes New Private Flying Division

On leave of absence from Piper Aircraft Corp., to promote the interests of the private pilot, Bill Strohmaier has been named acting secretary of the NAA's new private flying division. Encouraging improved touring service facilities, promotion of air



Strohmaier

tours, games, competitive flying events, are part of the new division's aims. Aeronca, Cub, Howard, Taylorcraft, Shell and Standard Oil are behind the movement.

The program calls for cooperation from state aviation directors, active distributors traveling in their territories, oil companies' field representatives, manufacturers' field sales representatives, active private owners and others.

An operators' section and an owners' section will be set up nationally within the new division. In addition, an industry advisory committee will be asked to advise and guide on the activity of the division.

Attend Aeronca Meeting

Seven Aeronca representatives attended the first annual dealer-distributor meeting held recently by Ray Beebe, district manager for Iowa and Nebraska, at Des Moines. Carl Wooten, v.p.-sales, Aeronautical Corporation of America, was one of the principal speakers. Representatives in attendance were Edward C. Hogan, Hogan Flying Service, Scottsbluff, Neb.; Marion Weath, Ames, Ia.; Ellis Eno, Eno Flying Service, Ft. Dodge, Ia.; George Hanson and Doug Alexander, Aeronca Flying School, Waterloo, Ia.; J. M. Pick, Allied Aircraft Sales, Davenport, Ia.; Dan F. Hunter, Cedar Rapids Airways Inc., Cedar Rapids, Ia.

Friez Bulletin Available

A bulletin on the subject of the Friez Flight Analyzer has been distributed by Julien P. Friez & Sons, Baltimore, Md., and will be sent to interested persons. The flight analyzer has been designed and manufactured for installation in large types of commercial transports and military and naval aircraft, to provide automatic continuous and accurate records of various flight conditions such as altitude, air speed and vertical acceleration, or of the powerplant functions such as rpm, oil temperature and pressure and manifold pressure.

State Act Affirmed

Two or more cities may own and hold in joint tenancy lands for use as airports, according to a decision by the Arkansas Supreme Court, June 10. Upholding the constitutionality of state act 80 of 1939, the tribunal affirmed a chancery court's refusal to enjoin the cities of Helena and West Helena from issuing \$20,500 in bonds to finance a joint airport development project.

NEW AERONCA 1939

★★★★ Sensational
PERFORMANCE AND VALUE
Tops 100 Miles an Hour
Cruises 1½ Miles Per Minute
Send for Free Literature
Aeronautical Corp. of America
B-11 Lunken Airport, Cincinnati, Ohio

Visibility Emphasized

This photo shows the newly enlarged vertical tail surfaces recently installed on the light bi-motored plane built by N. B. Rich Airplane Co., East Boston, Mass. Test work has been carried on with Lycoming 50-hp. engines, although the ship was designed for 65-hp. engines. Twin tail arrangement is said to allow good slow speed control and assists in making possible single engine control. "Even with the engines now installed we can maintain level flight fully loaded and can make turn both with and against the dead engine," company announcement said. "Aileron control during single engine flying is particularly gratifying and ample."



Rich Bi-Motor Pusher Plane Testing With 100 hp.; Power Increase Soon

A new light bi-motored pusher plane being produced by N. B. Rich Airplane Co., East Boston, Mass., is being tested with Lycoming 50-hp. engines, although original design called for 65-hp. engines, and it is expected increased power will be installed within a few weeks.

With a plywood wing, tricycle landing gear and other features, the plane's makers believe the ship has the features most desired: "Twin-engine security, single-engine performance, a quiet vibrationless cabin, ease of entrance comparable to that of an automobile and unexcelled visibility," the statement said. Nose wheel is steered through the rudder pedals by means of a shock cord device. Rear wheel brakes operate hydraulically.

Company states that the propellers cannot be walked into and can not pick up ground objects. This position is pointed to as being favorable for float installation, since props will be out of the spray and docking will be simplified and safer.

Undercarriage is said to "take the finesse out of landings, prevents ground looping or nosing over, permits full use of brakes." Ship carries a nine-foot flap, and landing runs of 150 feet have been measured using half flap only.

Take-off, with pilot only, has been recorded in seven seconds with the 50-hp. engines. Take-off, fully loaded, is recorded at 10 seconds. Other figures follow: rate of climb, pilot only, 850 fpm.; rate of climb, fully loaded, 500 fpm.; service ceiling, fully loaded, 10,000 ft.

Complete figures are being withheld pending installation of engines of the horsepower for which the ship was designed.

Lederer's League

Jerry Lederer of Aero Insurance Underwriters stirred up no end of interest and comment when he formed a new organization known as La Ligue de Femmes des Hommes en Aviation, Quelle Dommages (League for the Wives of Men in Aviation, Poor Things).

Jerry says the symbol of the organization will be "a question mark upheld by a pair of wings (worn upside down while the old man is at home)." Qualification for membership is a husband who is away from home at least one month a year on aviation business.

From 390 Riverside Drive in New York City, Jerry has sent notices to WNAA groups, members of the 99ers and other women's flying groups. In addition, he is forming a "men's auxiliary" of which he is Brood Master.

GLIDER RULES EASED

CAA Relaxes Regulations in Connection With Airplane Pilots

In order to make it easier for airplane pilots to secure certificates for gliding, the CAA on Aug. 2 modified regulations governing examinations and flight tests in connection with the motorless craft.

The amendment to the regulations makes it possible for a candidate for a glider pilot certificate who already holds an airplane pilot license to qualify for examination after 25 glider flights or after five hours of gliding-soaring time. Formerly, before being eligible for examination and flight test, an airplane pilot was required to have had at least 100 glider flights.

Cochran Getting Ready

Jacqueline Cochran has officially announced her entry in the Bendix transcontinental speed classic on Sept. 2, opening day of the National Air Races at Cleveland. She will fly a new Severson Army pursuit type plane driven by a 1,000-hp., 14-cylinder Pratt & Whitney Wasp engine, substantially a duplicate of the craft and powerplant which she used last year. Miss Cochran expected to start for southern California, after taking delivery on the ship, where she intends to attempt a new international record for 1,000 kilometers. The mark is now held by Helene Boucher of France at 254 mph.

Heads NW Women's Group

Miss Cora Sterling of Seattle on July 15 was chosen president of the associated Women Pilots of the Northwest at a convention in Boise, Ida. Seattle was chosen for the 1940 meeting. Miss Sterling succeeds Miss Jessie Dunn, Boise. Other officers are Miss Genevieve Watles, Boise, v.p.; Miss Ruth Anderson, Seattle, secy.; Miss Lela Walker, Tacoma, treas.

Tests Nearing Completion

Test work on the Monocouch, now powered with two 150-hp. Menasco engines, is nearing completion, according to news from Monocoupe Corp., Robertson, Mo. Performance details will be released soon. Organization is emphasizing sales of the 90-A Deluxe-ship.

Pampa Sponsors Show

The Pampa, Tex., junior chamber of commerce will sponsor an annual air show to be held Sept. 23-24 at Municipal Airport which will feature races for planes of 50 hp. and under, 75 hp. and under and unlimited horsepower. Prizes totaling \$625 have been posted. Bert A. Howell is general chairman.

Martin's French Plans

Frank B. Fleischmann, factory representative of Glenn L. Martin Co., Baltimore, arrived in Cherbourg, France, recently to arrange for assembly of Martin planes ordered by the French government. He will superintend installation of erection equipment in hangars at which planes will be assembled and will be in charge of assembly operations.

Record Awards

(Continued from page 1)

Manufacturing Corp., Williamsport, Pa., \$270,000.

The awards above announced when consummated will represent the major portion of the Army's aircraft purchases under the recently-passed supplemental appropriations for the Air Corps expansion program. Additional types are under evaluation at Wright Field, the War Dept. said, and awards will be announced shortly, completing the procurement under the program.

Only meager details concerning the ships were released by the Army. In the 4-engine bombardment class, the planes were described as being similar to the Consolidated B-24, contract for which was announced Apr. 27, and the Boeing B-17B, contract for which was announced Oct. 8, 1937. "No details or photographs have been published as to the Consolidated B-24," the War Dept. said.

The B-17B, equipped with Wright Cyclone supercharged engines, weighing 22 tons, is similar to the B-17B which flew from Los Angeles to New York last week in the record time of 9 hrs., 14 min., 30 sec. "This bomber incorporates various minor improvements found desirable as a result of more than a year's service test of this type at Langley Field, Va.," the Army stated. The ship "can fly at speeds greatly in excess of the 250 mph. of the earlier 4-engine bombers, carry five machine guns and a crew of 7 to 9 men."

Concerning the twin-engine bombers, it was said that although they "do not have exact prototypes in operation in the Air Corps today, they are the type generally known as medium-bombers, and will perform the same general type military missions as the present Douglas B-18A."

The North American advanced training and basic training planes are said to be similar to the present BC-1's, now in use at many Air Corps stations, except that they contain several improvements and refinements. "The Vultee trainers do not resemble closely any training airplanes now in use," the Air Corps said.

Stearman's primary trainer is described as a modern version of the PT-13, while Lockheed's interceptors are said to be similar to the P-38 which was flown from California to New York in February in record time.

Air Corps Takes B-17B's

The Army Air Corps on July 29 took delivery of the first planes of its new fleet of latest-type Boeing B-17E Flying Fortresses, just 30 years, almost to the day, since the purchase of the first Army plane.

W. A. Hamilton Manages El Segundo Division

Walter A. Hamilton pioneer airline official and aviation executive who was appointed chief of field service for Douglas Aircraft Co., Santa Monica, Cal., on June 1, has been appointed manager of the El Segundo Div. of the Douglas company, it was announced recently by Maj. Carl A. Cover, v.p., and general manager.

The resignation of Edwin R. Doak, as v. p. of Douglas Aircraft and general manager of the El Segundo Division was announced at the same time. Doak said he resigned to enter a private business of his own, and while he did not reveal his plans, friends said he probably would enter the parts manufacturing field.

Eric Springer, pioneer Douglas test pilot and assistant superintendent of the Santa Monica plant, will be transferred to El Segundo to act as assistant manager. Harry Williams, night superintendent at Santa Monica, will become El Segundo superintendent, replacing Woodson C. Deeds who was transferred to the main plant. Williams is a veteran of aircraft construction and formerly was an executive at the El Segundo Division.

Hamilton joined Douglas after resigning from TWA at Kansas City where he was superintendent of maintenance.

Plastic Rights Purchased

Purchase by Fairchild Engine and Airplane Corp., New York, of all rights to the Duramold plastic process in the field of aircraft manufacture was announced recently. The Duramold process of molding fuselages and aircraft wings, as well as non-aviation products, was originally developed jointly by a subsidiary of Fairchild's and Haskelite Manufacturing Corp. of Chicago, under the engineering direction of Col. V. E. Clark. More recently rights to the process were controlled by Clark Aircraft Corp., in which Fairchild held a minority interest. Under the purchase agreement, Haskelite obtains the process rights in the non-aeronautical field.

CAA Anniversary

(Continued from page 5)

Portugal, New Zealand and Liberia for air traffic, air navigation, airworthiness certificates for export and recognition of pilot certificates. The division is preparing studies upon which the Authority will make a recommendation to Congress in accordance with the Act as to whether further regulation of the rates, fares and charges of carriers in foreign air transportation should be attempted. During the first six months of this year, 39 applications from owners of U. S. registered aircraft to fly over foreign territory were received and 32 were granted; 12 applications for flights of foreign planes in this country were received and 10 granted.



IT'S GOOD BUSINESS TO OWN A WACO

● It's good business to make your business trips in your own airplane. You'll save hours each day—days each week. And you'll get more attention when you fly to your appointments.

It's particularly good business to own a WACO— for Wacos are today's greatest airplane values. See your local dealer for prices, terms, and information on full-coverage insurance at 9% percent.



THE WACO AIRCRAFT

COMPANY, TROY, OHIO

ESTIMATED PERFORMANCE OF TRANSAIR 17

	Model 17 F and 17 SB	Model 17 BX	Model 17 HG
Power plant	17 F—Wright 17 SB—P & W	Ranger	P & W
Normal power	425 hp.	450 hp.	550 hp.
Gross weight	17,000 lbs.	18,000 lbs.	19,000 lbs.
Weight empty	10,600 "	10,800 "	12,000 "
Useful load	6,400 "	7,200 "	7,200 "
Power loading, normal	11.93 lbs./bhp.	10.91 lbs./bhp.	10.56 lbs./bhp.
Power loading, take-off	13.33 "	13.33 "	11.52 "
Wing loading	21.25 "/sq. ft.	22.50 "/sq. ft.	23.75 "/sq. ft.
Maximum speed	212 mph.	226 mph.	240 mph.
Cruising speed & sea level	178 "	190 "	195 "
Max. rate climb @ sea level	1,204 fpm.	1,513 fpm.	1,660 fpm.
Service ceiling	21,600 ft.	26,000 ft.	28,150 ft.

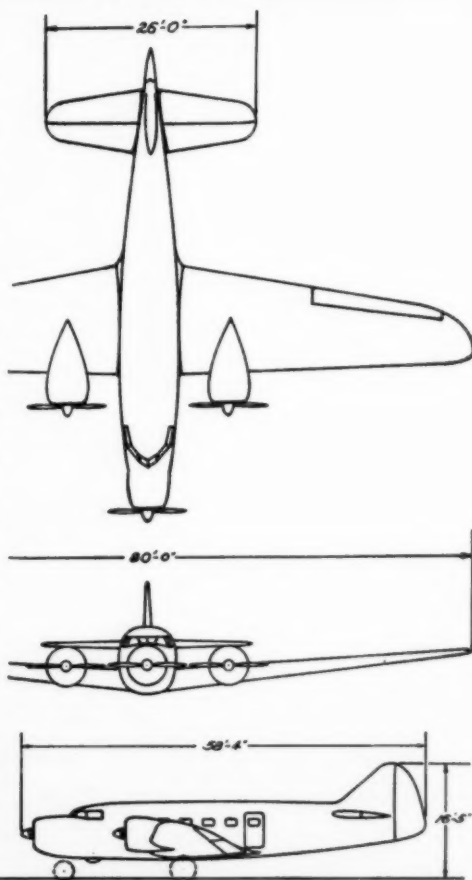
New All-Metal Transport Design



Top illustration shows artist's drawing of the Transair 17, three-engine transport, and directly beneath it is a model of the 17 superimposed on a photo taken over San Francisco's Golden Gate International Exposition.

At right are drawings of the Transair 17 HG designed for 600-hp. radial engines. This model is intended for use with three Pratt & Whitney Wasps—SIH1-G engines. This powerplant is a nine-cylinder aircooled radial rated at 500 hp.

Model 17 F was designed for three Wright Whirlwind R-975-F's, rated at 425 hp. The 17 SB will be powered by three P & W Wasp SB's, rated at 400 hp., while model 17 BX will use three Ranger SGV-770-BX's, 12-cylinder, aircooled, inverted V plant.

Transair Corp. Preparing To Build
14-Passenger, 3-Engine Transport

Details of a new tri-motor transport design, resulting from a survey of needs and requirements of U. S. airlines made by Lloyd Stearman, have been released by Transair Corp., with temporary offices in San Francisco. Vice-president of the firm is Stearman, former head of Stearman Aircraft and Stearman-Hammond and one of the Lockheed Electra's designers. Fred L. Huitt is president.

It was learned recently that Transair has filed a registration statement with the SEC for 250,000 shares to be sold at \$4, netting about \$800,000 to be used in erecting a plant and purchasing materials and equipment. Plant location has not been determined, although the company has considered San Francisco, Modesto, Cal., and mid-west centers.

Walter McGinty, formerly with Boeing School of Aeronautics, is chief engineer. Directors are L. B. Daniels, San Francisco pilot and insurance man; Arthur Gambarasi and Robert S. Hooker, Jr., Huitt, president, is a broker, pilot and plane owner. Underwriters will be in San Francisco and the midwest.

Corporation intends to manufacture the design by Stearman. His experience dates back to 1918, and he has been a designer of many planes, both in the private and transport fields.

The model 17, as it will be known, is an all-metal, low-wing monoplane of modern design and conventional construction. It will carry 14 passengers and crew of 3 making 17 in all. "The low-winged type should be more efficient structurally, and adapts itself more readily to the retractable landing gear," company announcement said. "In designing the fuselage, the tail will be deeper than in general practice, with thicker horizontal and single vertical tail surfaces, in order to achieve a higher, roomier and more rigid structure."

A model of the ship was tested in California Tech's wind tunnel where engineering data was checked.

Ship will be powered by three identical engines, either radial or inline, of from 450 to 600 hp. each. "Due to the distribution of powerplants and their relative size, climb and ceiling with one engine inoperative will be high enough to allow for a sufficient margin of safety under the most adverse conditions," the statement said. "Because of these characteristics, an engine failure in take-off will not be critical."

Transair model 17 BX will employ three aircooled Ranger SGV-770-BK engines. Normal power is 450 hp. Model 17 HG will use three Pratt & Whitney SIH1-G Wasp engines of 500 hp. (600 emergency power). The Wasp is a geared, aircooled nine-cylinder radial. Model 17 SB will be fitted with three Pratt & Whitney Wasp Juniors (SB's) of 400 hp., nine-cylinders arranged radially and aircooled. The 17 F model will be powered by three Wright Whirlwind R-975-F's, aircooled radials of 425 hp. normal power.

Because each of the three engines is smaller, having a maximum of only 66 hp. per cylinder, and are located at a greater distance from passenger's cabin, it is believed that noise and vibration will be less than in a bi-motor arrangement of comparable power.

Passengers' cabin will have full 6' 4" inside headroom for its entire length, due to an unusual depth of the fuselage. Standard arrangements will be five double seats on the right side and four single seats on the left side, in addition to a collapsible seat for the stewardess or hostess, located in the entrance way. Ship will have a crew of three.

Pilot's cabin will be 58" high and 74" wide. A room 3' wide, 5' long and 6' 4" high to the rear of the left-hand pilot's seat is available for radio, an

additional crew member, company employee, line inspector or for pilot's personal equipment.

Forward cargo compartment, one of two, is 100 cu. ft. in size, located between passengers' cabin and pilot's compartment on the ship's right side. Rear compartment of 85 cu. ft. is forward of the washroom and aft of the passenger cabin. "Both compartments will be made accessible from the inside of the plane as well as from the outside," it was announced. Additional cargo space in the wings also will be available.

Nose wheel will be hydraulically steerable and, at the will of the pilot, can be made to free-caster with hydraulic damping. About nine inches of nose wheel will extend below the surface of the fuselage for protection in case of a landing with wheels in retracted position, although an indicator will show the wheel's position.

Engine-driven fuel pumps supply the engines; equipment also will include emergency hand pumps. All fuel pressure will be confined to the engine compartments, and pilots will be able to select any one of three supply fuel systems for each of the three engines through three selector valves.

Lockheed Contract to Vega

Burbank, Cal., Aug. 1—Vega Airplane Co. announced today that it had been awarded an additional contract by Lockheed Aircraft Corp. to build parts and accessories which increases the 1939 parts backlog to approximately \$750,000. Contract calls for types of minor assemblies and machined parts to be installed in commercial and military type Lockheed planes. Vega now employs approximately 500 persons and has 102,000 sq. ft. of floor space available for present production and expansion.



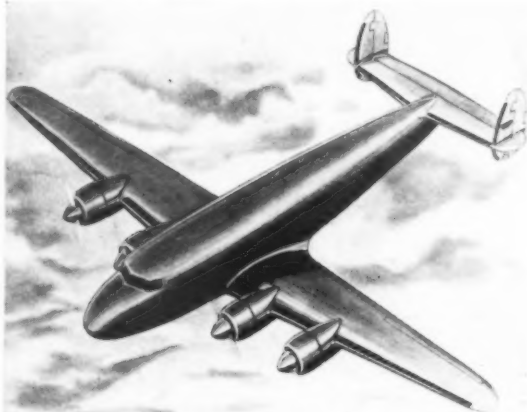
**BUSINESS
IS GOOD
On Our New
East-West Link**

Continental's new Denver-Wichita route fills a real need in air service. It offers a southern short-cut between Colorado and all the East and Southeast. The extra convenience of the new service has made it popular from the start.

**CONTINENTAL
AIR LINES**
America's Fastest

First Glimpse of the Excalibur

The accompanying preliminary drawing is the first glimpse of the Lockheed Excalibur, four-engine commercial landplane now under development at Lockheed Aircraft Corp., Burbank, Cal. The Excalibur is Lockheed's first step in the direction of the four-engine market. Not shown in the sketch is the tricycle landing gear, being used for the first time



on any Lockheed commercial type. This model (44) will be powered by four 900-hp.-at-take-off Wrights, instead of 550-hp. engines as originally specified. This will boost by many mph. the first stipulated speeds of 240 mph. (maximum) at 8,000 ft., and 220 mph. cruising. It will lift absolute ceiling well above the original 24,000 ft. Cabin will be pressurized, and plane eventually will carry a triple tail. First test flight will be made early next summer.

Fleet Expects to Have Model 60, All-Metal Trainer, Ready in October

Expected to make its first flight in October, a low-wing, all-metal two-place trainer having semi-cantilever wings with external bracing has been announced with preliminary details by Fleet Aircraft Ltd., Ft. Erie, Ont. The ship is known as model 60.

Fuselage is a semi-monocoque structure consisting of bulkhead rings and skin of relatively heavy gauge, and longitudinal stringers at points of high stress. Material is high strength aluminum alloy and all joints are riveted.

Fuselage is constructed with a bolted joint at the second bulkhead aft of the rear pilot's seat and a second bolted joint just forward of the horizontal tail plane. These joints may be arranged in such a way that their strength will exceed that of a normal riveted joint, and this arrangement would permit the replacement of any one of three portions of the fuselage which may become damaged in service.

Flap control is provided through mechanical linkage to both pilots' cockpits.

Vertical fin is built as an integral part of the fuselage. Rudder is a rivetted frame structure of aluminum alloy and is fabric covered. All control parts are housed within the fuselage's contour. Elevators are of similar construction as the vertical fin and are one-piece.

A cantilever type landing gear is provided which consists of individual shock absorbing legs mounted in the main wing structure at the strut point and just forward of the main beam. Right and left members of the landing gear are identical and interchangeable. Sufficient strength is provided in all members to accommodate use of skis.

Elevators and ailerons are operated by control sticks, and the rudder is operated by rudder pedals. All moving parts are on ball bearings.

Specifications of the model 60-L and 60-K follow:

	60-L	60-K
Power . Jacobs 250 hp.	Jacobs 330 hp.	
Weight empty .. 1,850	1,850	
Normal gross .. 2,900	2,900	
Net wing loading		
14.5 lb./sq. ft.	14.5 lb./sq. ft.	
Power loading 11.6 lb./hp.	8.8 lb./hp.	
Max. gross weight (aerobatic) . 3,500 lb.	3,500 lb.	
Performance at 2,900 lb.		
Max. speed (sea level) 164 mph.	191 mph.	
Cruising speed (sea level) . 150 mph.	163 mph.	
Landing speed (sea level) 58 mph.	58 mph.	
Rate of climb (sea level) 1,000 ft./min.	1,650 ft./min.	
Service ceiling 15,000 ft.	18,000 ft.	
Cruising range 690 mi.	610 mi.	

It is noted that the Jacobs 250-hp. engine is the same as the 330-hp. plant, but its power output has been reduced to give exceptionally long life.

Engine is provided with a cowl of the NACA type and pressure baffles. Oil is circulated through the engine at 80 lbs. per sq. in. pressure by a gear pump built into the engine. Another built-in gear pump delivers oil back to the tank, located just aft of the engine.

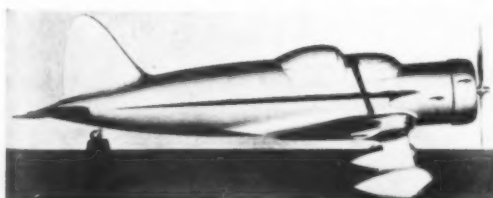
Porterfield Elects Woods

According to Edward Porterfield, president of Porterfield Aircraft Corp., Bryant Woods, aviation expert and statistician of Auchincloss, Parker & Redpath, has been elected to the board of directors of the Kansas City aircraft firm. Mr. Woods has been in aviation since 1914.

Boeing Elects Corbet

Darrah Corbet, Seattle business executive, recently was elected a director of both Boeing Airplane Co. and its manufacturing subsidiary, Boeing Aircraft Co., it was announced by C. L. Egtvedt, president.

Model of a Two-Place Trainer



A model of Fleet Aircraft's model 60 trainer is shown here. The model 60-L will be powered by a Jacobs engine of 250 hp. and will have a Curtiss Reed propeller. Wing area, net, will be 200 sq. ft. Model 60-K, with the same net wing area and a Curtiss Reed propeller, will be powered by a 330-hp.

Jacobs. Wings are constructed in two sections with no center section. Each wing has a single beam of aluminum alloy with laminated flanges of sufficient cross section to take bending stress. Ailerons are rivetted frame structures of aluminum alloy, fabric covered. They are mounted diagonally and are differentially operated, being provided with mass balances but no aerodynamic balance.

DORRELL PROMOTED

Vega's Chief Pilot Will Be Sales Manager; Continues Supervision of Test Program

Vernon A. Dorrell, Vega Airplane Co.'s chief pilot, has been appointed sales manager of the company, it was announced recently by Mac Short, president, following first flight tests of the new Vega transport. Dorrell, connected with aviation since 1924, joined Pan American Air-



Dorrell

ways in 1929 and in 1934 was appointed operations manager of Aerovias Centrales (PAA) in Mexico.

Lockheed Aircraft Corp. sent him to Australia in 1936 to introduce a fleet of new transports, and in 1937 he was assigned to Mid-Continent Airlines as operations manager. He joined the Vega company in Burbank, Cal., in 1938 as flight research pilot and sales officer. He will continue to supervise the Vega's test program in conjunction with new duties.

MARTIN PROMOTES EBEL

Gets Post of Chief Engineer; Resignation of Berthoud C. Boulton Announced

William K. Ebel, assistant chief engineer of Glenn L. Martin Co., Baltimore, has been promoted to the post of chief engineer, it was announced recently by Glenn L. Martin, president.



Ebel

Resignation of Berthoud C. Boulton, vice-president—engineering and director, has been accepted by the directors, it was revealed. Boulton's plans have not been made public.

Ebel joined the Martin company in 1922 when it was located in Cleveland. As chief test pilot and engineer for the organization, he has flown constantly and, in addition, on alternate Sundays, takes a holiday by flying with the Maryland National Guard in which he holds a captain's commission. Ebel lives in Kingsville, Md., with Mrs. Ebel and two children.

Engineers



Leonard S. Hobbs, engineering manager (right), and A. V. D. Wilgoos, chief engineer, both of Pratt & Whitney Aircraft Div. of United Aircraft Corp., East Hartford, Conn., took part in the development of the new two-row, 18-cylinder radial engine built by P & W and announced July 14 by the War Dept. (AMERICAN AVIATION, Aug. 1). Hobbs directed the project and Wilgoos was directly responsible for the design.

8 Flights

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Kansas City Celebration



More than 2000 persons were assembled at Kansas City Air Terminal the night of July 1 to witness inauguration of a new connective service, Tulsa to Minneapolis, by Mid-Continent Airlines. Five hostesses representing five major airlines met in Kansas City for 20 minutes as a part of the ceremonies. Mayor Bryce B. Smith, John N. McLucas, chairman of the aviation committee, chamber of commerce, and Postmaster Alexander W. Graham, all of Kansas City, made short talks.

Photo shows (l. to r.): Velva Barrett, Northwest Airlines; Thomas F. Ryan, III, executive vice-president, Mid-Continent; Emma Fern Reid, United Air Lines; Gladys Entrekin, TWA; Mayor Smith; Lucia Greene, American Airlines; Postmaster Graham and Alicia Romero, Braniff Airways.

Employees Form School



Charter members of the newly organized Curtiss Flyers, flying school composed of employees of Curtiss Aeroplane Div., Curtiss-Wright Corp., Buffalo, N. Y., are shown with their light plane with a Curtiss SBC-4 dive-bomber in the background. Left to right are: George Reddick, Carl Bianchi, Dick Cline, secy.; George White, pres.; Frank Maracle, treas.; Eddie Krayem, instructor; Phil Rayner (above); Joseph Janus (below); Frank Hansen, Karl Roos and Lloyd Reinhard, v.p.

Philadelphia's Hawaiian's



Representatives of major airlines in Philadelphia recently held a Hawaiian dinner on the Hawaiian Roof of the Hotel Adelphi.

In the foreground (l. to r.): W. K. McCullough, Consolidated Air Line ticket office; Miss Kay Blair, Eastern; Charles Bristol, Adelphi porter; T. Danser, TWA; R. Henry, TWA; G. H. C. Tredick, Consolidated ticket office; Miss A. Elliott, American; Dewey Dean, United; L. A. Mayes, United. On the other side of the table (l. to r.): Robert Gardner, asst. mgr., Adelphi; E. J. Fincke, Eastern; Jack Curran, United; Miss J. Smith, United; Chet Bolinger, United; H. Nelkirk, sales mgr., Adelphi; Miss L. Beriswell, TWA; L. P. Marechal, TWA; Miss E. Glah, Consolidated ticket office; R. Scholl, TWA.

Planes and Instructors Arrive



Nine Army training planes, flown by instructors of Ryan School of Aeronautics, San Diego, Cal., arrived at the school recently after a two-day flight from Randolph Field, Tex. Beginning July 1, the Ryan school, along with eight other commercial flying schools, relieved the Army of primary military training of cadet pilots.

Photo shows (left to right): Joe Duncan, Paul Wilcox (Ryan chief instructor), William Sloan, Dick Huffman, Capt. Walter Todd (of Randolph Field), Ben Hazelton, Pete Larson, William Evans and Ben Johnson.

Prosecutions

(Continued from page 1)

plane on a civil airway carrying two passengers for hire.

Thorald Gilland, Tulsa, Okla., navigated a plane on a civil airway without possessing a valid pilot certificate, such flight being made after sunset without proper navigation lights; said aircraft was flown without having been repaired as to airworthiness following an accident in 1938 in which it was damaged.

Clyde Clelland, Hicksville, N. Y., flew a plane on a civil airway without being possessed of a valid pilot certificate.

Ronald Griest, Warren, Ohio, navigated an uncertificated plane on a civil airway without being possessed of a valid pilot certificate.

CAA SUSPENSIONS

Authority Announces Rulings on Seven Pilots

Revocations and suspensions of pilots certificates announced by the CAA recently are as follows:

Robert J. Sinclair, private pilot certificate revoked (certificate was temporarily suspended for 30 days on July 11, 1939). On June 13, 1939, Sinclair allegedly flew a plane over a congested area at Pyramid Lake Ranch, Sutcliffe, Nev., at an altitude not sufficient to permit an emergency landing outside of such area in the event of complete power failure; engaged in acrobatics at less than 500 ft.; collided with a gasoline pump near the post office at the ranch and crashed in the immediate vicinity of several persons and dwellings.

Addison L. Welty, commercial pilot certificate suspended until and including expiration date of said certificate, and no application for renewal or reinstatement shall be made until the expiration of 60 days from date of this order. Welty, the CAA states, on April 1, 1939, flew a plane at an altitude of less than 1000 feet over a congested area at Dodge City, Kan.

Chester F. Brown, solo pilot certificate suspended for 60 days. On April 13, near Municipal Airport, Great Bend, Kan., respondent navigated a plane with a passenger aboard who was not a certificated instructor.

Irving E. Herman, limited commercial pilot certificate suspended until and including expiration date of certificate, and no application for renewal or reinstatement may be made until after expiration of 90 days from date of this order. Respondent, on May 8-9-10 near Rochester, N. Y., gave flying instruction to a passenger.

Arthur J. Dalgie, solo pilot certificate suspended for 60 days. On May 10, 1939, at Springfield, Vt., respondent flew a plane with a passenger aboard who was not a certificated instructor, and who occupied a control seat in said plane without the dual controls having been made inoperative.

John L. Corlett, solo pilot certificate suspended for 60 days. On May 14, near Municipal Airport, Arkansas City, Kan., respondent flew a plane with a passenger who was not a certificated instructor, and who occupied a control seat without the dual controls having been made inoperative.

Lloyd E. Pickett, solo pilot certificate suspended for 60 days. On May 14, near Municipal Airport, Arkansas City, Kan., respondent flew a plane with a passenger who was not a certificated instructor and who occupied a control seat without the dual controls having been made inoperative.

McInnis Takes 8 Planes

A. C. McInnis of McInnis Aviation Service, Minneapolis, with seven ex-students, took off recently in eight Cubs from Piper Aircraft Corp., Lock Haven, Pa., for Minneapolis in one of the biggest mass flyaway deliveries known to the Piper firm. McInnis Service has logged 3,000 student hours without injuries to students or planes. McInnis, a Cub dealer, has as instructors Jake Pfander, Lyle Thro and Alfred Lohmar.

PAA Moves Into North Beach

Pan American Airways late in July began to move into North Beach Airport, New York's municipal project, and expected to complete occupancy of the seaplane administration bldg. and hangar by Sept. 1. Lieut. Col. Brehon B. Somervell, NY WPA administrator, who announced PAA as the first tenant, said no date had been set for North Beach's opening. PAA expects to use the airport as a base for trans-Atlantic flights.

Man, Woman, Child?

The CAA is clamping down. Pilots who do not tread the straight and narrow are finding their licenses suspended or lifted permanently.

Recently, the Authority revoked a student pilot license with the following eloquent explanation: "Respondent...navigated an aircraft...in flight with a passenger aboard said aircraft and gave flying instruction to said passenger; during said flight said aircraft was not equipped with dual controls and said passenger was permitted to sit on the lap of said pilot while receiving said instruction."

But no hint as to whether "said passenger" was male or female!

Earle L. Johnson Appointed Director of Ohio's Bureau

Appointment of Earle L. Johnson of Cleveland as Ohio's new director of aeronautics was announced on Aug. 1 by Gov. John W. Bricker. Johnson,



Johnson

with David S. Ingalls, former Assistant Secretary of the Navy, fathered the Ohio laws governing aviation 10 years ago when both were members of the legislature.

Johnson, a

transport pilot of considerable experience, has used his own plane extensively in the last few years in the operation of his business. He is a member of the board of directors of the National Air Races.

The new directors, who took office on Aug. 1, immediately undertook reorganization of the bureau, which has been more or less dormant in recent years and which the legislature was on the point of abolishing. He appointed as his assistant Francis G. Lauffer, former aviation editor of the *Columbus Citizen*, who has served as acting head of the bureau for several months, pending appointment of a permanent director.

Working with Johnson will be an advisory commission appointed by the governor composed of the following men: George A. Stone and John T. Corradi of Columbus; Gordon K. Bush of Athens and Don C. Flower of Troy. The director and commissioners agreed to seek cooperation of officials of 1,400 municipalities in the attempt to carry out an air marking project. The Ohio law makes it mandatory for each municipality to erect an air marker, and provides further that if a municipality fails to comply with the law, the director may cause such a marker to be erected and shall charge the cost thereof to the municipality.

"Under John Vorys, who was Ohio's first director of aeronautics, a successful air marking campaign was undertaken and completed," Johnson declared, "and this state was at one time among the best marked states in the nation. In recent years this work has been neglected... This activity... must be revived."

A program to encourage aviation industrial concerns to locate in Ohio also is contemplated, and the bureau is expected to aid pilot training schools in cooperation with the federal government.

MCA Buys 3 Wasp Jrs.

Mid-Continent Airlines recently took delivery on three Pratt & Whitney 9-cylinder 450-hp. Wasp Juniors (SB-985) at a total cost of \$13,240.66, line reported to CAA.

FOUR TO CITEJA

Gates, Knauth, Lebel and Sweeney
Appointed to American Section

The State Dept. on Aug. 4 announced that President Roosevelt has approved the appointment of the following persons as additional members of the American section of the International Technical Committee of Aerial Legal Experts, commonly referred to as the CITEJA (initials of the French name of the organization).

Samuel E. Gates, chief of the international division, CAA, Washington; Arnold W. Knauth, specialist in air law, New York; Arthur L. Lebel, aviation section, division of international communications, Dept. of State, Washington; Edward C. Sweeney, international division, CAA, Washington.

Other members of the American section are Stephen Latchford, chief, aviation section, division of international communications, Dept. of State (chairman of the American section); Dr. Fred B. Fagg Jr., dean, school of commerce, Northwestern University, Chicago; Dr. Denis Mulligan, specialist in air law, Washington.

The committee is engaged in the codification of international private air law by the drafting of international conventions on which final action is taken at diplomatic conferences.

United and TWA Observe

Anniversaries of 1st Flights

Anniversaries of the first transcontinental passenger tour and the first air scheduled operation of the New York-Cleveland-Chicago airway were observed by TWA and United Air Lines, respectively, recently.

TWA's "Sky Chief," carrying several of the passengers who participated in the initial cross-country air-rail trip in 1929, completed the round-trip anniversary flight from Newark Airport to Burbank, Cal., and return, in about 43 hrs., while 10 years ago the west-bound trip alone required 50 hours. Pilots of the old Transcontinental Air Transport line who remained when that organization was merged with Western Air Express to form TWA in 1930 took part in the flight.

To mark the 20th anniversary of the New York-Cleveland-Chicago airway operation, inaugurated July 1, 1919 by the Post Office Dept., United transported record-breaking loads of air passengers in its nine regular and several extra 21-passenger Mainliners. Operation of this route was taken over from the Post Office Dept. by a predecessor company of United in 1927, and since then the company has made 50,000 scheduled flights over the airway. Jack Knight, veteran pilot and now public education director for United, flew the Cleveland-Bellefonte leg of the initial flight two decades ago.

Warner Super Scarab 165 Installed by Cessna, Culver and Brewster

Warner Aircraft Corp., Detroit, Mich., has announced that installations of the Super Scarab engine, model 165, have been made by Cessna, Culver and Brewster companies with other installations now in progress. Model 165 was installed in the Brewster fleet which was entered in competition at Wright Field early in April.

TC No. 214 has been issued to Warner covering the new seven-cylinder radial engine. Rated at 165-hp. at 2,100 rpm., the powerplant has an approved



Production of 12 DC-5 transports is under way at the El Segundo Div., according to announcement of the Douglas Aircraft Co., and deliveries to domestic and foreign airlines are scheduled for late 1939 and early months of 1940. Lines slated to get the first planes are Penn-Central, KLM and Scadta. The Dutch airline (KLM), which operates the longest scheduled route in the world from Amsterdam to Batavia, Java, has signed a

contract for four of the ships. Penn-Central is expected to take six and the South American line two.

Announcement said the DC-5 has successfully passed tests given by the NLL (Nederlandsche Luchvaart Laboratorium) of the Netherlands. The flight tests determined: landing and take-off performance, ground run after initial ground contact, static stability and the plane's characteristics while in a condition simulating a one-engine failure immediately after take-off.

4-Blade Experiments

Believed to be the first constructed in this country, a four-blade controllable propeller recently was installed for experimental purposes on the Air Corps Curtiss P-36 pursuit at Wright Field, Dayton, O., according to the "Air Corps News Letter." The pursuit is the same one which was used for the installation and experimental testing of dual, oppositely rotating propellers mounted in close tandem.

"The special object of these experiments will be to obtain comparative performance data on the airplane when equipped with the two types . . . and also when equipped with the usual constant speed three-blade type," the statement said. "For a given propeller diameter, the solidity ratio of a propeller can be increased by adding blades. More efficient operation can thus be obtained for a given power and diameter at high altitudes, especially above 20,000 feet. The four-bladed propeller used has a Curtiss Electric, constant speed hub equipped with dual blades of standard design."

Holliday Is Spartan Mgr.

H. Warren Holliday has been appointed sales mgr. for Spartan Aircraft Co., Tulsa, Okla., having been operator of Gulf Airways, Ft. Myers, Fla. He previously served with Fairchild Aviation Corp.

One of N. Y. Fair's Big Attractions



Four of the Army's and Navy's light-weight bombers are shown here suspended from the roof of the Aviation Bldg. at the NY World's Fair. On the floor are a Navy fighter, an Army pursuit and a Piper Cub (left). In the rear is a mock-up of the Curtiss-Wright 20 transport which is viewed by 1,200 persons hourly. Aviation's display at the fair is second in drawing power among the general exhibits.

'Grand Old Lady' Retires

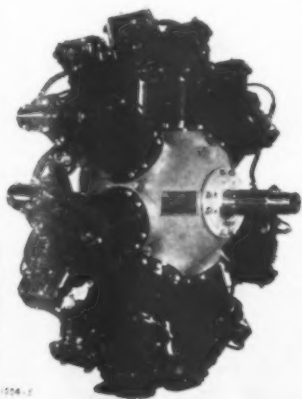


For many years the world's biggest commercial aircraft, Heracles, Imperial Airways' "Grand Old Lady of the Air," has been withdrawn from the Paris service. Heracles made her first trip in Sept. 1931, and has been in constant service since. She has flown over 250,000 miles and carried more than 100,000 passengers. Heracles is a 13½ ton, 4-engined, 40-passenger plane with a speed of approximately 100 mph. Her place has been taken by new 240-mph. liners of the Frobisher class.

Propeller Division Expanding



Architect's drawing of a machine shop of 35,000 sq. ft. to be erected at the main factory of Curtiss Propeller Div., Curtiss-Wright Corp., at Clifton, N. J. to be completed and in operation by Sept. 15, according to Robert L. Earle, v. p. and general mgr. of the division. The company also will erect an addition to the main factory to accommodate its expanded shipping and service depts. New expansion will increase facilities by 50%, or to approximately 100,000 sq. ft. Propeller production originally was a part of Curtiss Aeroplane Div. at Buffalo, N. Y., where 20,000 sq. ft. were occupied. Curtiss Propeller Div. was organized Aug. 1, 1938 as a separate unit of Curtiss-Wright Corp., and its own plant and manufacturing facilities were established at Clifton.



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Fortnightly Review

(Continued from page 1)

craft with a certain company and be assured of rapid production. But such production is only possible because export orders have kept plants running, have kept hundreds of draftsmen busy, have kept good workers on the payroll, have kept the stock rooms filled and the executive personnel intact.

The national defense ballyhoo of last winter when officials were slipping to newspapermen tips that anywhere up to 13,000 aircraft were to be built, has all died down. Perhaps this official propaganda had its planned effect abroad and in Congress. Today the outlook is more sane and the manufacturers are to be congratulated for not wildly expanding plant facilities to meet fantastic quantities of orders which were not forthcoming. But the 1940 procurement should be ample to keep the nation's most essential defense industry busy for a year or two and despite the headaches of the past, the next year looks most encouraging.

Let's Sell the Motorist

THERE will be those in the airline sales departments who will disagree with billboard advertising to attract passengers but there are also those in airline sales departments who have been so close to their own organizations, and have been so long in the business, that they think they know all the answers.

We believe the airlines are missing a bet at certain spots over the country. For example, we had the experience recently of driving from San Diego to Washington. An auto trip is something to be done *once* and is not the least of the numerous sales arguments for the airlines. As we drove out of San Diego at 5 o'clock in the evening, we kept thinking, "We could take an airplane this evening, be in Washington tomorrow morning. Here we are starting out on a long, hot six days of driving to cover the same distance."

Of course there was no airline billboard east of San Diego to remind car drivers of the time they could save by flying, but down below sea level near El Centro, not far out of San Diego, was a large billboard erected by Southern Pacific Railroad. It merely said, "Next time take the train. It's cool." The sign was illustrated by a comely feminine figure lounging in an air-conditioned lounge car. If you have ever driven through Imperial Valley in the summer you can realize the strong selling appeal which this billboard has. How effective would have been an airline billboard, done in good taste, which merely said, "Overnight to New York—18 hours" or some such catch line which would have caught the fancy of the driver looking forward to a six or seven day

transcontinental trip by auto. Another sign could have told the airline time to El Paso or to other stops which mean time and distance to auto drivers. There should be such billboards at the start of every transcontinental highway in the west. The railroads have featured air-conditioned travel as against hot auto travel, but the airlines have something which every auto driver can well understand: saving in time. Such advertising should be most effective in the summer time and billboards need not be offensive to the eye when properly placed and well done.

Here is another impression gained by the slow travel of the automobile. Except for El Paso, Big Springs and Abilene, all in Texas, and some of the larger cities such as San Francisco and San Diego, the motorist never has any contact with aviation. For example we drove from Washington to Yellowstone without seeing an airport along the highway, without seeing anything more than a small ill-painted sign advertising sightseeing hops or student instruction. In passing through Huron, S. D., it occurred to us that there were two airlines serving this community, although there was no indication of this service to motorists. We suggest that airlines would be smart in such communities to erect a sign on the outskirts along each main highway stating the simple fact that this community is served by Ajax Airline and listing the airline travel time to the biggest city in each direction. Mention should be made of airmail, of air express. Now the average airline sales executive will argue that there is no direct selling by this method, hence it's no good. But we argue that commercial salesmen, wealthy farmers in surrounding towns, and motorists driving for pleasure, are all direct prospects. Some billboard selling may be indirect, but it is worth while. How much more impressed with air transportation would we have been if we had been reminded each time we drove into a town or city served by an airline that there was service available. And how much more impressed would we have been, too, if we could have read that the next stop was only an hour away by air when we planned to spend all afternoon reaching it by automobile. It is the frequent reminder that sells products. One approach is usually sufficient to sell a customer on anything—soap, radios, air travel—but *which* approach is the essential angle on selling. Motorists won't sell their cars and hop on planes to finish their trips, but next time they plan a trip, whether for business or pleasure and regardless of the destination, they will *consider* air travel if they have constantly been reminded of time savings by plane. And the time to sell prospects on time savings is when he's thinking in terms of time, and there is nothing like an automobile trip to hammer home time and distance. Airlines are reaching prospects through magazines, through newspapers and through personal contacts. But the highway traveler and the radio listener are completely oblivious to air travel. Since American Airlines has led the way with billboards in large cities, we suggest to American that it further capitalize an excellent selling job with billboards in the southwest where distances and ground heat are only too well known. Smaller lines such as Inland, Mid-Continent and Delta could further cement their operations with community interest by doing the same. The cost would be negligible. Aviation is still small. It still is reaching only a percentage of the population with its messages. It should not overlook any selling bets, particularly when the cost is relatively small. The best time to sell air travel to prospects is when the prospect is using another medium of travel.

American, Pan Am, TWA Shift Press Men; Shake Up Rumored

Press agents for Pan American Airways, American Airlines and TWA recently were shifted to new posts. Changes follow:

Francis Walton, who has handled PAA publicity on the Pacific division for some years, was transferred Aug. 1 to the Atlantic division with offices in New York, Baltimore, London and Marseille. He works directly under W. I. Van Dusen. George Gardner, who has been in the NY office since leaving the former Bureau of Air Commerce, will replace Walton. Carl Anderson, former American publicity man in Los Angeles, has taken a similar job with the LA bureau of Pan Am.

Stewart Faulkner, chief of AA's NY publicity dept. for the last year, has

been promoted to a similar job in LA. Frank Brunton of American's Chicago staff replaced him. Joe Adams remains at Newark for American.

New TWA press agent in LA is Leo Barron, recently of the LA bureau of United Press. Rumors on the west coast indicate that TWA's public relations staff may be completely shaken up, with Clancy Dayhoff, chief, sent to LA, Barron to NY and Theon Wright, present NY TWA press agent, to Kansas City.

Wiggins Takes Cessnas

Appointment of E. W. Wiggins Airways Inc. as associate dealers of Cessna planes has been announced by Atlantic Aviation Sales. Wiggins will represent the firm in New England, having taken delivery recently of a C-145 demonstrator.

Campaign Theme—'It Pays to Fly'

Theme of the cooperative advertising campaign being sponsored by 16 airlines and 20 associated industries will be "It Pays to Fly." The campaign, being created for the ATA by Erwin, Wasey & Co., Inc., will start October 2 and run through May 1940, according to Col. Edgar S. Gorrell, ATA president. Two-page four-color insertions in the *Saturday Evening Post* and *Life* magazines, one-page four-color insertions in *Time* and *Newsweek* magazines, and black and white insertions in *Nation's Business* will carry the advertising messages to a weekly audience of nearly 7,000,000 for the campaign's duration. Associated industries participating include aircraft, engine and parts manufacturers and gas and oil industries. O. B. Winters is writing the copy; Roger M. Combs is account executive for Erwin, Wasey.

Grey Goes Out

Americans Await
New *Aeroplane*

Twenty-eight years' editorship of Britain's weekly, *The Aeroplane*, will be ended on Sept. 1 by Charles G. ("Center of Gravity") Grey who will be replaced by Edwin Colston Shepherd, air correspondent of *The Times* (London).

Accused of being anti-American, anti-French, anti-British, pro-Nazi, pro-Fascist, Grey has had a life-long fear of flying machines, would rarely go up, and never without a prayer.

During his editorship of *The Aeroplane* he has taken delight in finding fault with American-made aircraft, never missing an opportunity to see a close similarity in the new American so-and-so and the old British so-and-so. Recent sales of American planes to the British Air Ministry drew forth new wrath from Grey who admittedly has no respect for facts. *The Aeroplane* was widely recognized as being chronically inaccurate.

Reason for Grey's resignation is not known, but it is believed that his continued attacks on British policies, domestic & foreign, and his praise of totalitarianism finally became overbearing in England as they had long before in America. "Only the directors of Temple Press Ltd., not even C. G. Grey, know why I'm resigning," he said following notice that "rumours" were "floating around Fleet Street." "There may be other things to do in the World besides the daily routine," he wrote in his July 19 issue.

Meanwhile, American readers are awaiting the appearance of *The Aeroplane* under Shepherd's direction.

Uninformed sources have suggested that Grey be given the editor's chair of *Flugpost*, Nazi semi-monthly, where he might expand on the glories of anything from Junkers to jellybeans without interference. Maybe.

Employment of Graduates by Manufacturers Reported

News of graduates of Parks Air College, East St. Louis, Ill., has been reported as follows:

H. Porter Churchill is employed by St. Louis Aircraft Co. in the aircraft engineering dept. The company, a division of St. Louis Car and Foundry Co., is working on an Air Corps order for tandem seat biplane trainers.

Edward P. Clark has entered the engineering dept. of Waco Aircraft Co., Troy, O.

Paul H. Taylor is with Beech Aircraft Corp., Wichita, Kan., assigned to the engineering dept.

Walter J. Hyatt is employed by the engineering dept. of Lockheed Aircraft Corp., Burbank, Cal.

A. Lee Linhart is employed as a pilot by Kokomo Aviation Co., Kokomo, Ind. Frank L. Hancock, formerly with Vega, has been with the tabulating dept. of Lockheed Aircraft Corp. since the first of the year.

9 Graduates Employed

Following is the employment record of New York University's 1939 class in air transport:

Bernard S. Adams, asst. meteorologist, Pan Am, Baltimore; Edward J. Byrne, courier, United, N. Y.; John F. Gray, junior meteorologist, TWA, Kansas City; Eugene L. Halle, Bernard A. Lyons and Gerald G. Kayten, junior meteorologists, aviation exhibit, World's Fair, N. Y.; Frederick A. Lambach, junior meteorologist, TWA, Newark; James R. Moody, junior meteorologist, TWA, Newark; Joseph Pellino, junior meteorologist, American Export, N.Y.

Schuttig With Siebenthaler

Leonard A. Schuttig has been appointed chief engineer of Thomas L. Siebenthaler Manufacturing Co., it was made public in Kansas City on Aug. 7 by Robert S. Van Cleve, general mgr. Schuttig formerly was employed by Bendix Radio Corp. as chief engineer in charge of radio development projects.

Aero Bookshelf

AIRCRAFT ENGINE MAINTENANCE, by H. Edward Bogges and Daniel J. Pitman Jr. Pitman Publishing Corp., New York City. 462 pp. \$2.50.

In their book, the authors, both of whom are licensed pilots, airplane and engine mechanics, have endeavored to present the fundamentals of engine construction, operation and maintenance in a form which may be readily grasped by a beginner in the field. Also included is reference material for the expert engine mechanic.

The book contains chapters on preliminary considerations, principles and types, construction and detail, tools, equipment and methods, servicing and operating, carburetors and induction systems, fuel systems, lubrication, elementary electricity, ignition, starters & generators, instruments, propellers, periodic check, power plant installation, top overhaul, trouble shooting, fuels & oils, tables, and engine specifications. Numerous pictures and drawings are also included in the volume.

Obituary

CHARLES E. BRINK, 59, retired treasurer of United Air Lines and first secretary of Boeing Aircraft Co., Seattle, Wash., was found dead in his garage in Seattle on July 31.

HAMPTON D. EWING, 73, New York attorney who specialized in aeronautical law, died Aug. 5 at his home in Yonkers, N. Y. He was chairman of the committee on aeronautical law of the Association of the Bar of the City of New York and of a similar committee of the New York State Bar Association. He also was aeronautical law adviser in the U. S. State Dept. Mr. Ewing was the author of monographs on aeronautical law including "Law of Aeronautics" and "Right of Flight."

ROSS M. G. PHILLIPS, 65, inventor whose alcohol engine was adopted by Franklin Motors Co., died in New Haven, Conn., his home, on July 25 following a week's illness. Many scientists regard Mr. Phillips' motor as the first air-cooled engine in the world. Another achievement was a cut-out designed to prevent fire by short circuit in the event of crash or collision.

RUDY HEUSS, 34, Canadian Airway pilot for the last 10 years, died in Edmonton, Alta., on July 25 after an illness of eight weeks. He was known to residents of the Canadian northwest from Edmonton to the Arctic shores and beyond. Heuss was the central figure in many far north and Arctic ambulance flights.

RALPH ORNDORF, 30, employee of American Airline Products Inc., Lock Haven, Pa., died from scalds when a high pressure boiler exploded at the company's plant on Aug. 2. Orndorf lived in Charlton. Explosion caused \$10,000 damage to the plant.

Through an error in an obituary printed in the Aug. 1 issue, it was said that Charles F. Horner is chairman of the Nebraska Aeronautics Commission. Mr. Horner is president of the National Aeronautic Association, Washington, D. C. His mother, Mrs. William Horner, 84, died on July 7 at Kearney, Neb.

Sioux Falls Date Set

First Assistant Postmaster W. W. Howes is expected to give the dedicatory address at ceremonies marking the opening of Sioux Falls (S. D.) Municipal Airport on Sept. 15. Frank D. Burke, committee chairman, said Howes had agreed to speak, and Mayor John T. McKee predicted that the port would be ready for actual use before the date of dedication.

Marshall-Brown Gordon Delbert Brown, domestic sales mgr. for Douglas Aircraft Co., and Miss Jean Marshall were married on July 15. It was announced recently. Mrs. Brown is the daughter of Mr. and Mrs. Hubert Byron Deming, of Westwood Hills, Los Angeles suburb.

Brydon-Allen Eddie Allen, chief of the research division, Boeing Airplane Co., Seattle, Wash., and Miss Florence Brydon, actress, were married recently in Seattle.

PAA MANAGER NAMED

J. A. Zalduondo Will Direct Sales For Eastern Division; Other Appointments Made

J. A. Zalduondo has been appointed sales manager of the eastern division of Pan American Airways, it was announced recently by Herbert C. Dobbs, Jr., division traffic manager, who has launched a campaign to increase business in PAA's Caribbean sector.



Zalduondo

Stressing that the appointment was made to direct and coordinate sales efforts, Dobbs explained that Zalduondo will remain on the division traffic staff.

Following appointments also were made to the sales staff: L. G. del Portillo, district sales manager, Havana; L. E. Soler, assistant district sales manager, San Juan; J. A. Olavarria, assistant district sales manager, Caracas; Hugh S. Voegtlin, sales representative (temporary), Maracaibo; John E. Crook, sales representative, Kingston; George Morley, sales representative, Nassau; B. A. Figueroa, sales representative, Ciudad Trujillo.

New Boston-Maine Service

A third round trip between Boston and Bangor, Me., intended to "provide facilities for Maine business men who desire a full day in Boston," was inaugurated recently by Boston-Maine Airways, it was announced by Paul F. Collins, president. Known as "The Early Bird" and operating week days only, a Lockheed Electra leaves Bangor Airport at 8:15 a. m. (DST) and, with stops at Waterville, Augusta, Lewistown-Auburn and Portland, arrives at East Boston Airport at 10:14 a. m. Return trip, known as "The Sunset Special," leaves East Boston at 7:20 p. m. with arrival in Bangor at 9:17 p. m.



★ NEXT STOP ★ LOS ANGELES

And the favorite stopping place of air-minded travelers...The BILTMORE Hotel. The social center of the Southland...Western America's largest, finest hotel.

Here, you are never up in the air for service... but always aware the Biltmore is as modern as aviation.

CENTRALLY LOCATED
IN TRANSPORTATION CIRCLE

RADIO COLLECT
for Reservations



The BILTMORE Hotel
DOWNTOWN LOS ANGELES



"Stanavo" has helped to fly it
faster and farther year after year

Yes, our aviation fuel powered the Swallow biplanes that carried the first air mail under government contract back in 1926. And today "Stanavo" Aviation Gasoline flies with that same pioneer air fleet—now the world-famous United Air Lines!

As new planes and new engines make possible better and better air mail service, "Stanavo" research sees that improvement in aviation gasoline keeps pace. Insist on "Stanavo" for your plane—fly with today's most modern fuel.

STANAVO
Aviation Gasoline

STANAVO SPECIFICATION BOARD, INC.
225 Bush Street, San Francisco, California

THE C.A.A. RECORD

(Applications, Hearings, Dockets)

APPLICATIONS

Boston-Maine Asks Extension

Boston-Maine Airways has filed application with the CAA requesting extension of AM27, Boston-Caribou, Boston-Montreal, to Moncton, N. B.

UAL Asks New York City Stop

United Air Lines has filed application with the CAA for amendment to its certificate on AM1, Newark-San Francisco, to designate New York City as the terminal point and to change the designation of Newark from terminal to intermediate point.

Pan Am Asks New Zealand Route

Pan American Airways on July 31 filed application with the CAA for permission to establish regularly scheduled fortnightly mail, passenger and express service between San Francisco-Los Angeles and Auckland, New Zealand, via Honolulu, Canton Island and Noumea, New Caledonia. Planning to use a Boeing Clipper, the 7,952 miles would be flown in 49 hrs., schedule including a full day's layover in Honolulu and overnight stops at Canton and Noumea. At the beginning, stops at Los Angeles would be made only on outbound trips, and only through traffic would be carried between that point and San Francisco. Pan Am is prepared to start service promptly, the company states.

GRANTED

UAL-WAE Equipment Loan Approved

The CAA on July 28 approved the application of United Air Lines and Western Air Express for the temporary loan in emergency cases by United to Western of one or more Boeing 247-D's and one or more Douglas DC-3's or DST's. The CAA approved the agreement provided that (1) approval shall not be deemed a determination or finding that any of the rentals or charges provided in said agreement are fair and reasonable; (2) approval shall extend only to temporary loans of said planes by UAL to WAE strictly for emergency purposes and shall not be deemed to be a waiver of or exemption from any requirement in the competency letters of United that United Keep available at all times a sufficient number of planes in order to maintain its currently effective schedules, and (3) approval shall terminate if the CAA at any time finds that the agreement is adverse to the public interest or in violation of the Civil Aeronautics Act.

Imperial Gets Trans-Atlantic Permit

Announcement was made Aug. 7 of the granting of a foreign air carrier permit to Imperial Airways for operations between the United Kingdom and the U. S. via Canada, Newfoundland and Ireland, or via Bermuda. Service is limited to two roundtrips weekly. The permit is good for 15 years from June 1936.

HEARINGS

Imperial Trans-Atlantic Hearing

In a 20-minute hearing on Imperial Airways' application for a foreign air carrier permit on a trans-Atlantic route, Cyril H. Condon, company attorney, on July 26 put into evidence an affidavit and permit issued Apr. 17, 1937, pursuant to an exchange of notes in agreement between the governments of the U. S., United Kingdom, Irish Free State and Canada. He asked that an identical permit be issued. CAA members Robert Hinckley, Edward Warner, Oswald Ryan and G. Grant Mason Jr., were present at the hearing.

Mayflower Airlines Hearing

Hearing was held July 26 and Aug. 4 on the application of Mayflower Airlines for a "grandfather" certificate on its Boston-Nantucket route, with stops at Provincetown, Hyannis and Oak Bluffs. Testimony presented to CAA Examiner Robert J. Bartoo by Parker W. Gray, president of Mayflower, revealed that operating expenses during the "grandfather" period totaled \$8,700 while operating revenues were \$4,266. For the past few years, Gray said, revenues have been little more than 50% of expenses. The low total of \$3.60 for express during the period, he explained, was the result of the company's practice of transporting newspapers, the biggest express item, in exchange for advertising. The company carried 495 passengers during May-August of last year.

MISCELLANEOUS

CAA Charges for Duplicate Certificates

In order to effect a reduction in costs and in the number of requests for duplicates of certificates and related forms, the CAA on Aug. 4 ordered that the following classes of certificates may be issued in duplicate to the holder of the original upon request and a showing that the original certificate has been lost or destroyed, and payment of the prescribed fee: (1) all classes of airman certificates, (2) aircraft registration certificates, (3) aircraft airworthiness certificates, and (4) airman and aircraft record forms. Cost of such duplicate certificates is \$1.00 per page.

Japanese Get Flight Permit

Authorization has been granted by the CAA, effective Aug. 15 and terminating Sept. 30, for a Mitsubishi twin-motored transport plane, bearing Japanese identification marks J-BACI, and equipped with two Mitsubishi "Kinsei" 900-hp. engines, to fly over Alaska from Nome to Miami, Fla., on a round-the-world goodwill flight sponsored by the Osaka Mainichi and the Tokyo Nichinichi. Pilot will be Sumitoshi Nakao, crew members are Shigeo Yoshida, Hajime Shimokawa, Nobusada Sato and Chosaku Yakawa, while passengers will be Hiroshi Saiki and Ichitaro Takata. Stops are scheduled at Nome, Fairbanks, Whitehorse, Juneau, Seattle, San Francisco, Los Angeles, Kansas City, New York, Washington and Miami.

P O Favors Roswell-Hobbs-Carlsbad Line

The Post Office Dept. on July 26 filed a statement with the CAA stating that additional air mail service is needed at Roswell, Hobbs and Carlsbad, N. M. Continental Air Lines had formerly filed application for stops at the above points on AM26, and hearing on the request will be held Aug. 17 at the Hotel Cortez, El Paso, before CAA Examiner C. Edward Leasure.

CAA Rules on Power to Review PMG's Orders

The CAA has issued a decision ruling on its power to review orders of the Postmaster General. The opinion is in connection with the Eastern Air Lines vs. American Airlines case. Complete story on page 17.

Calendar of Hearings

Aug. 17—Continental Air Lines, for amendment to AM29 certificate to include stops at Roswell, Hobbs and Carlsbad, N. M. To be held in Hotel Cortez, El Paso.
Aug. 28—TWA, application for increased mail rates on AM2, 36, 37 and 38. Room 5044, Dept. of Commerce.

Sept. 6—Braniff Airways, Chicago & Southern Air Lines, Eastern Air Lines and Missouri Central Airlines, on new routes serving Houston, Shreveport, Memphis, Evansville and Louisville. Carlton Hotel, Washington.

Sept. 7—American Export Airlines, for a trans-Atlantic certificate of convenience and necessity. Departmental Auditorium, Washington.

Sept. 7—C. Coburn Darling, Canadian Colonial Airways, application for approval of interlocking directorates. Room 1851, Dept. of Commerce.

Sept. 14—Tri-State Aviation Corp., for a certificate of convenience and necessity under "grandfather" clause. Departmental Auditorium.

Sept. 18—LaMotte T. Cohn, TWA, application for approval of interlocking directorates. Room 1851, Dept. of Commerce.

Sept. 18—Trans-Southern Airlines, Braniff Airways, on new routes serving Amarillo, Oklahoma City, Memphis and Atlanta. Raleigh Hotel, Washington.

Sept. 27—Missouri Central Airlines, Eastern Air Lines, on new routes serving Nashville and St. Louis, and Kansas City, Springfield and Memphis; and Missouri Central's application for Birmingham-Nashville-Evansville-Terre Haute-Chicago; and EAL's Muscle Shoals-Nashville application. Mayflower Hotel, Washington.

Sept. 29—Erie Isles Airways, for a certificate of convenience and necessity under the "grandfather" clause. Departmental Auditorium.

Oct. 9—Delta Air Corp., Pennsylvania-Central Airlines, Southern Air Lines, between Cincinnati, Lexington, Knoxville and Atlanta; Knoxville, Birmingham, Meridian and New Orleans; Knoxville, Charleston and Pittsburgh; Atlanta and Savannah; Savannah and Brunswick; Atlanta and Memphis; Atlanta and Pensacola. Departmental Auditorium.

Oct. 18—Braniff Airways, Kansas City Southern Transport, on new routes serving Kansas City, Joplin, Tulsa, Fort Smith, Texarkana, Shreveport, Alexandria, Baton Rouge and New Orleans. Carlton Hotel.

Oct. 30—Pennsylvania-Central Airlines, for a new route serving Knoxville, Asheville, Hickory, Winston-Salem, Greensboro, Raleigh, Rocky Mount, Elizabeth City and Norfolk. Mayflower Hotel, Washington.

Marquette Awarded Certificate Opposed at Hearing by TWA

Despite the intervention of TWA in the case, the CAA on July 25 announced the issuance of a certificate of convenience and necessity under the "grandfather" clause to Marquette Airlines on its route from St. Louis to Detroit via Cincinnati, Dayton and Toledo. Marquette had also requested a stop at Seymour, Ind., for refueling only, but the CAA stated that it could not designate such a stop.

TWA had opposed the issuance of a certificate to Marquette on the grounds that the latter was not operating adequate and efficient service during the "grandfather" period, that American Airlines was the real operator, and that Marquette's service was not continuous or bona fide.

In its decision, the Authority found that Marquette's operation was adequate, efficient and continuous during the "grandfather" period. Of the 67,710 miles scheduled in that time, 62,627, or 92.5%, were actually operated, the CAA said, adding that the company flew, either wholly or in part, on 63 of the 64 days on which service was scheduled.

Discussing the contention that American was the real operator, the opinion stated that, although Marquette had certain leases and contracts with that company, it was, however, "a corporate entity in its own right, being incorporated under the laws of Delaware." The Authority also stated that although it "has instituted an investigation, which is now pending, to determine whether the agreements and transactions between applicant and American involve any violations of the provisions of the Act, that inquiry is not pertinent to the issues in the present proceeding. The Authority has ample power to deal with any such violations under other provisions of the Act."

Commenting on the bona fides (good faith) of Marquette's operation, which TWA contested, the opinion said that the omission of these words from the Act would seem to indicate that Congress did not intend that bona fides should be considered. "Section 401(e) (1) of the Civil Aeronautics Act serves a similar purpose as the provisions of the Motor Carrier Act and the Merchant Marine Act," the CAA explained. "The inclusion of the words 'bona fide' in the 'grandfather' provisions of the earlier Acts and the omission of this term from section 401(e) (1) raises a strong presumption that Congress deliberately omitted those terms from the latter provision and did not intend that bona fides should be an element of the proof required. In the light of the considerations set out above, the Authority would not be justified within the proper bounds of statutory construction in ignoring the ordinary meaning of the language of section 401(e) (1) of the Act in order to write into the section the requirement that an operation must have been bona fide and in accordance with law. The Authority's action in

the present proceeding is controlled by the plain terms of the statutory mandate. The Authority cannot usurp the legislative function of Congress under the guise of construing the language of the statute."

In connection with Marquette's financial condition, the Authority stated: "It is concluded . . . that so long as an air carrier during the 'grandfather' period has furnished to the traveling public a transportation service which is, for example, reasonably safe, comfortable, expeditious, convenient and dependable, under the circumstances, to meet the needs of the public, the fact that the carrier's operations may have been conducted at a financial loss, at a relatively high cost, and without adequate capital does not make the service rendered inadequate and inefficient within the meaning of section 401 (e) (1). That this is the meaning and intent of the section is made clear when it is considered that at the time of enactment of the Civil Aeronautics Act most air carriers were operating at financial losses and many were struggling with the hampering effects of inadequate financing."

The Authority also stated that "the facts shown by the record in the present proceeding are not analogous to those involved" in the Airline Feeder System case, in which the CAA refused the company a certificate.

Mail Pay Trips Increased

Braniff Airways, Northwest Airlines and American Airlines, it is learned, have been granted increased mail pay frequencies by the Post Office Dept. Braniff has been awarded a third pay trip between Dallas and Houston which, under the present rate, will net the company \$21,425 per year additional pay. The PO also has discontinued Braniff's weight-credit trip between Ft. Worth and San Antonio, where there are two pay schedules. Northwest now has five mail pay trips in operation between Chicago and Minneapolis, following issuance of the company's CAA rate decision, abolishing weight-credit trips. American's fourth pay trip between Newark and Ft. Worth has been made daily instead of five days a week. American claimed that it was losing money on the five-day-a-week basis because the increased mileage dropped the mail payment into a lower bracket. It is expected that the PO will take similar action in the cases of United and TWA, whose fourth mail trips also are on a five-day basis.

ATLANTIC TRAFFIC HEAVIER

Trans-Atlantic traffic becomes heavier as the weeks go by. Regular schedule for passengers, mail and express on Pan American Airways follows: Lv. Southampton on Wednesdays; lv. New York on Saturdays. Imperial Airways mail schedule, inaugurated Aug. 5, leaves Southampton on Saturdays; lv. New York on Wednesdays. American Export Airlines and Air France Trans-Atlantic have been continuing survey flights preparatory to the inauguration of service.

Air Safety Board Reorganized; Hoyt, Caldwell Promoted

Consolidation of the CAA Air Safety Board's three sections into a single division, with a view both to effecting substantial economies and achieving increased efficiency of operation, was announced July 29 in con-



Caldwell

Hoyt

nection with the appointment of Frank Caldwell as acting chief of the investigation division and Robert D. Hoyt as executive officer.

Under the new organization plan, which became effective Aug. 1, the Air Safety Board has merged its former investigation and technical divisions into a new investigation division, and abolished its information and publication division. All sections of the old investigation and technical divisions are preserved intact under a single chief except for minor changes in functions. The functions of the old information and publications division are being carried out by the executive office.

Another major change involves Darrell T. Lane, chief counsel of the Board, who vacated his position Aug. 15. The ASB has made no arrangements to fill the job. It is rumored that the office may be abolished and the Board's legal work handled by the examiners' section, headed by Fred Glass.

Caldwell, who joined the ASB shortly after its organization, entered aviation in 1917 in the Air Corps. After serving 18 months overseas, he joined the air mail section of the Post Office in 1920, later being employed by the commercial airline taking over operation of the transcontinental air mail service. He has had experience in flight operation, dispatching, maintenance, overhaul, airway construction and business functions. Prior to his appointment to the ASB, Caldwell was assistant to the vice president—operations for United Air Lines. He is a native of Utah.

Hoyt, who has taken the position vacated by the recent resignation of William S. McDuffee, formerly was chief of the ASB's old investigation division. From Clearwater, Fla., Hoyt entered aviation as an Army pilot during the World War. After several years as a sales executive, he entered the government service in 1930 with the aeronautics branch of the Dept. of Commerce (later the BAC) in the position of aeronautical inspector. He was transferred to the ASB upon its organization.

(Picture of Hoyt Copyright by Harris and Ewing.)

Canadian Commercial Aviation for 1938

(Preliminary Report)

Hours flown	81,376
Miles flown	8,350,463
Paying passengers	87,482
Non-paying passengers	16,510
Revenue passengers miles	8,533,999
Non-paying passenger miles	1,523,050
Freight carried	19,368,865
Mail carried	1,305,174
Ton miles—freight	940,315
Ton miles—mail	139,437

CAA Rules on Power to Review PO Orders

The CAA on July 28, in connection with the case of Eastern Air Lines vs. American Airlines, ruled that it is without power under section 405(e) of the Act to review the action of the Postmaster General in designating a schedule as a schedule for the transportation of mail where, at the time of the issuance of the designation, the schedule involved has been established, or proposed to be established by an air carrier.

After discussing section 405(e), the decision stated: "It is clear from this analysis of the section that the authority is granted power to review those actions of the Postmaster General which are expressly characterized by the section as being evidenced by an order; namely, (1) an order requiring an air carrier to establish additional mail schedules; (2) an order disapproving a change in mail schedules proposed to be made by an air carrier; and (3) an order altering, amending or modifying the mail schedules or the changes proposed to be made therein by an air carrier. It is concluded, however, that the Authority's jurisdiction to review is limited to these three types of cases."

Eastern Air Lines had protested to the CAA against the addition on June 1 of two new Newark-Washington schedules by American, and the placing of weight-credit mail on the trips by the Postmaster General. EAL requested the CAA to amend, revise, suspend or cancel the PMG's order.

The company also charged that American was engaging in unfair and deceptive practices and methods of competition. The CAA decision stated that a hearing will be held on this question.

Although issued in connection with the EAL-AA case, it is important to note that the decision does not rule specifically on that case. At oral argument, held June 21, counsel for the contending parties stated that they would file, if possible, a stipulation setting out the facts surrounding the issuance of the PMG's order and the inauguration of the schedules. Such stipulation has not been filed to date and, if it is and it is found that the PMG designated the schedules for mail, the CAA will not have jurisdiction; if the PMG ordered American to establish an additional schedule, the CAA will have power to act. If no such stipulation is received, evidence will be received by the CAA at the hearing on the unfair and deceptive practices case.

National Promotes Stremmel

Don Stremmel has been promoted by National Airlines to the position of traffic manager in Mobile, Ala.

JUNE AIRLINE STATISTICS

	April 1939	May 1939	June 1939	June 1938	% of increase over June May 1938 1939
Companies operating ..	11	17	17	19
Companies reporting ..	18	17	17	19
Passengers (rev.)	118,687	149,291	* 164,578	100,200	64.25 10.24
Express (lbs.)	663,884	725,061	824,630	558,710	47.60 13.73
Express pound miles	400,501,211	409,938,146	457,946,817	343,375,649	33.37 11.71
Miles flown (rev.)	6,267,595	7,122,347	* 7,182,963	6,136,757	17.05 0.85
Passenger miles flown (rev.)	47,450,733	57,483,927	* 63,693,991	40,304,987	58.03 10.80
Available passenger seat miles flown ..	87,470,221	104,844,126	* 107,654,134	85,577,647	25.80 2.68
Revenue passenger load factor	54.25	54.83	59.17	47.10	25.63 7.91
*All-time high for any previous month.					

NORTHWEST
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with a great **NEW DOUGLAS FLEET**

● Northwest's new 4-point Service marks the greatest air travel news of 1939—the most important forward step in Northwest's progressive history. For it means that now you can enjoy all the comforts and advantages of modern air transportation, and save hours, save miles, save money!

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Washington-Seattle ..	224.80*
Chicago-Winnipeg	50.00
Chicago-Seattle	160.00
New York-Portland	240.90*
Pittsburgh-Fargo	84.10*
Chicago-Twin Cities ..	25.00

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Your choice of 3 Famous Air Lines Between California and Chicago. Unlimited stop-over privileges for side trips to national parks and playgrounds.

1 A GREAT NEW FLEET OF 1939 DOUGLAS PLANES

21-passenger sky giants, built and super-powered to Northwest's specifications. The smoothest, most powerful, most comfortable Douglas Airliners in service anywhere.

2 A CREW OF 3 ON EVERY DOUGLAS FLIGHT

A Captain selected for exceptional skill and judgment; a 1st Officer, chosen for experience and proved ability; an attractive stewardess (a registered nurse), carefully trained for gracious efficiency.

3 FAST, FREQUENT, CONVENIENT SCHEDULES WITH SPLENDID CONNECTIONS

4 Douglas flights daily, both ways, between Chicago and Twin Cities. 2 Douglas flights daily both ways, between Seattle and Chicago. Splendid connections at Chicago for New York and all the East—at Seattle for California and the Pacific Coast. And in addition—other 1st Class daily flights.

4 NEW, LOW FARES THAT SAVE YOU MONEY

Never before has Douglas comfort been offered to the flying public at anywhere near Northwest's new low, ground level fares, just read and compare!

NORTHWEST Airlines

SHORT CUT—CHICAGO, TWIN CITIES, PACIFIC COAST

WAE Stockholders, W. A. Patterson Issue Statements on Proposed Deal

Eight stockholders of Western Air Express have distributed to about 1,600 minority holders of the company a statement asking "careful consideration" of the "serious situation confronting them as a result of the application of United Air Lines Transport Corp. to the CAA for permission to acquire from six individual stockholders of our company approximately 55% of its capital stock."

At the same time, William A. Patterson, UAL president, has issued a memorandum to all his employees explaining all discussions which have taken place on the proposed deal, denying that the WAE stockholders would control United or that the transaction would result in a monopoly.

The WAE stockholders who issued the statement to minority holders opposing the purchase were R. L. Fry, Pocatello, Idaho; E. B. Craney, Butte, Mont.; John J. Garland, Los Angeles; Ralph Waycott, Pasadena, Cal.; Stephen Sedlock, Great Falls, Mont.; Fred B. Sherif, chairman of Montana Aeronautics Commission, Helena, Mont.; A. T. Hibbard, president, Union Bank & Trust Co., Helena, and Robert A. Rowan, Los Angeles.

"If United succeeded in securing the necessary voting control of our company, it proposes to use such control to force you to accept substantially similar terms either through a merger of the two companies or a sale of the assets of our company to United," the statement said. "The industry is now

for the first time in its history in the way of being stabilized through the establishment of a sound regulatory policy by the government. . . . Our company . . . has three combined but distinct divisions. . . . They are not suited for operation in connection with a single transcontinental line. Indeed, one of them is now in direct competition with United. A hearing before the CAA has recently been completed on our company's application for an increase in its air mail rates and we are advised that on the evidence presented it is reasonable to expect favorable action in the near future. We are also advised that on the showing made it is reasonable to anticipate favorable action on its application for an extension to Lethbridge which, if granted, should add materially to its revenues."

The statement also said that WAE's operating revenues have shown marked improvement and added that acquisition by United would not promote economical and efficient operation. WAE's 1938 operating costs were 53¢ per revenue mile, while United's were 70¢, it claimed.

Patterson told his employees that he resented "having United Air Lines constantly connected with a mythical bank control. I have been president of United since the air mail cancellations and I have yet to meet the banker who controls United directly or indirectly, and from the records of stockholders I do not know of a banking group owning any substantial amount of stock in United."

11 States Have Airport Legislation, CAA Report Says

As of Dec. 31, 1938, 11 states had statutes expressly providing for exercise of the state police power either to prevent the erection of structures and other objects in the vicinity of airports, that would be hazards to the landing and taking-off of planes, or to compel the removal or lowering of existing obstructions, according to a recent report published by the CAA, entitled "Survey of State Airport Zoning Legislation."

Compiled by John M. Hunter of the Authority's airport section, the report reviews all state legislation on the subject of airport zoning, and contains a summary chart.

"Of these 11 states, it appears that in only two cases, Nebraska and Pennsylvania, is the statute clearly designed to accomplish the latter purpose (compel removal or lowering)," Hunter summarized, "and that, so far as method is concerned, nine states may be said to have acts providing for use of the method popularly known as 'airport zoning,' these being Alabama, Connecticut, Florida, Indiana, Louisiana, Maine, Maryland, Michigan and Pennsylvania, while the statutes of Iowa and Nebraska apparently contemplate use of the so-called court action method. In addition, it appears that these 12 statutes, Pennsylvania having two, differ widely in the regulatory agency designated, the particularity with which the zoning and building height limits are stated, the requirements themselves, and certain other respects."

Copies of the study (Report No. 6) are available from the liaison and information division, Civil Aeronautics Authority, Dept. of Commerce, Washington, D. C. No charge is made.

Braniff Names B-Liners

On the 11th birthday anniversary of Braniff Airways, B-Liners at cities along the Braniff routes were dedicated in the name of heroes of the five states the line serves and Mexico. At Chicago the "Abraham Lincoln" was dedicated; at Oklahoma City Indian Chief Jasper dedicated a B-Liner in the name of "Sequoah"; in Kansas City the "Mark Twain" was dedicated for Missouri; in Wichita the "General Frederick Funston" was named; in Houston the "General Sam Houston" was commemorated; and in San Antonio, ranking Mexican officials dedicated the "Benito Juarez."

CAA to Advertise Bids On 10 Instrument Landing Systems

The CAA expects to advertise for bids by the end of August on instrument landing systems to be established at 10 points throughout the U. S. Tests are almost completed on various systems, and the Authority has \$150,000 available for the 10 units, it is learned.

For the past year or so, the CAA has conducted tests on systems presented to it. Air Track was tested at Pittsburgh, Bendix at Newark, International Telephone Development (built to CAA specifications) at Indianapolis. During the latter part of July a new system, invented by a Navy man, was demonstrated at Lakehurst, and the Lorenz unit, last on the program, will be completed at Ft. Worth.

Following completion of all tests, a meeting of the Radio Technical Committee for Aeronautics will be called (the committee is composed of representatives from CAA, Army, Navy, Coast Guard, FCC, Aeronautical Radio, some airlines and manufacturers). The CAA will ask the Committee for a choice, based primarily on the following question: Which system is the simplest, most dependable, and easiest for the pilot to operate? If one is superior to all others in this respect, it will be the basis of specifications for bids. However, if two should be adjudged of equal merit, next consideration will be the engineering feature—Which is the simplest and most rugged in operation? Reason for throwing the matter open to bid is that the CAA is prohibited from negotiating contracts. The system chosen by the RTCA, however, will be the only basis of specifications.

Inland's New Hangar

Cheyenne, Wyo.—Inland Air Lines, operating mail, passenger and express service Cheyenne-Great Falls, Mont., and Cheyenne-Huron, S. D., has set up headquarters in a new \$40,000 hangar just completed at Municipal Airport here.



Main Street to Mexico

Today, fleet Braniff Douglas B-Liners cast racing shadows over the old "Chisholm Trail", where ox-drawn freighters first linked the commerce of a continent. This southwest "Course of Empire" is still the main business street from Chicago to Brownsville on the border, and on to Mexico and all Latin America.



GREAT LAKES TO THE GULF

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GRAND CENTRAL AIR TERMINAL
GLENDALE (LOS ANGELES) CALIFORNIA

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SPECIALIZING IN
AERONAUTICAL ENGINEERING
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(NO FLYING IS INVOLVED IN EITHER COURSE)

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MAJOR C. C. MOSELEY

PRESIDENT

AA 8

Airline Personnel

Changes in EAL's Atlanta operations and traffic depts. follow: Glenn Stewart transferred to Atlanta as transportation agent; W. C. Strickland, at Atlanta temporarily from Chicago, now in Beaumont as station mgr.; Tommy Thompson is a new radio operator; R. G. Geeslin added to operations personnel; Lamar Dunn has become a transportation agent; O. J. Bray is newly appointed station mgr.; John Shoaf, Don Cook and Graham Weant have been added to field traffic personnel; Lanier Bishop and Henry Phillips have been transferred from the field to the downtown office.

John Anderson, formerly sales representative for American, has accepted the position of resident mgr. of the Montreal office of Canadian Colonial.

EAL Transportation Agent J. D. Godard of Vero Beach and Miss Regina Jags of West Palm Beach recently announced their engagement. Marriage was set for July.

In charge of Pan Am's Information desk and switchboard at Brownsville is Lydia Zimmuth.

New member of Eastern's Corpus Christi family is Charles F. Hines, formerly of Atlanta. H. L. Clements is Corpus Christi field mgr., having been transferred from Vero Beach where he served as transportation agent.

Herbert L. Whitmore, Phoenix station mgr. for American for four years, has been transferred to Detroit where he will manage the line's station.

Miss Genevieve Sorensen of Charleston, S. C. became the bride of John R. Walton Jr., Eastern employee at Charleston Municipal Airport on May 14. Daniel Walter Cochran, of EAL's 51 Vanderbilt Ave. office in NY, was married to Miss Rita Smith of Clayton, Mo. on June 17.

V. W. Wilson from Jacksonville and L. D. Schwartz, W. A. Sundell, R. W. Prevost, Bob Everett and Jay Sheppard from NY have joined the EAL force at Washington.

Willis Abbey, former chief mechanic for Eastern at Brownsville, has been transferred to Miami. John Kagy, formerly of New Orleans, succeeded Abbey. EAL's Brownsville personnel now consists of S. A. Kerr, field & traffic mgr.; John Navarro, transportation agent; Ralph DuBose, chief radio operator; L. J. Koller, radio operator; R. D. Phillips, aircraft radio technician; Nagy, chief mechanic; E. A. Erickson, mechanic; Sam Hughston Jr., mechan-

ic's helper; Demetrious Delgado Zarate, ship cleaner and porter.

Al Lynar of American reservations in NY recently was engaged to Dorothy E. Koenig of Dumont, N. J.

New TWA hostesses in training at Kansas City are Frances E. Gillilan, Melva Zatezio, Esther M. Gravelle, Jean C. Edinger, Esther Robertson, Henrietta Munaw.

Ellen Church, said to be the first airline stewardess in the world, saw her first sleeper plane recently at Chicago Municipal Airport under the guidance of Marie Hess, United's chief stewardess. Miss Church became a stewardess in May 1930 and was in charge of the original crew of eight girls who flew the United route from Chicago to Oakland.

Transportation Agent L. B. Dalpiaz has been transferred from Camden to Newark to assume EAL mechanical duties.

D. W. "Scotty" Moir, former Trans-Canada station mgr. at Edmonton, has left that line to join Canadian Airways.

Dorothy Werner is the only feminine traffic representative in any of Braniff's offices, serving the line in the Baker Hotel, Dallas. A pioneer in the business, Miss Werner has a decade of service to her credit.

Miss Janet Orr, daughter of State Senator Charles N. Orr, has been appointed traffic representative for Northwest in Rochester, Minn. She has been in the Spokane traffic office of the line for the past year.

EAL Chicago notes: Eddie Schuman, new to operations staff, replaces Willy Strickland, transferred to Beaumont as station mgr. Mel Hambel has gone to Nashville as d.t.m. Lee Blyden, formerly doing reservations work, is engaged in outside contact work. Charles Tehan of the city ticket office has been promoted from traffic courier to reservations duty. In addition to regular sales work, Arch Werner has taken over agency work. Flight Steward Dave Schriener was on duty at the DC-3 pilot cabin exhibit at the Daily News Travel Show and Electric Living Show. Schuman was replaced at Indianapolis by Dick Walker, courier, who was replaced by George Mace.

Helen Moseley TWA hostess, is on board the mock-up of the Curtiss Wright CW-20 on exhibit in the Aviation Bldg. at NY World's Fair to describe the plane's interior. Victor H. Bentz, Eastern steward, detailed to the Aviation Bldg. for the summer, describes technical aspects of the new liner. Bentz has 820 hrs. flying time.

James W. Belding, formerly a United reserve pilot on the Oakland-Salt Lake City division, has been promoted to captain and has been assigned to Denver to fly the Denver-Chicago division.

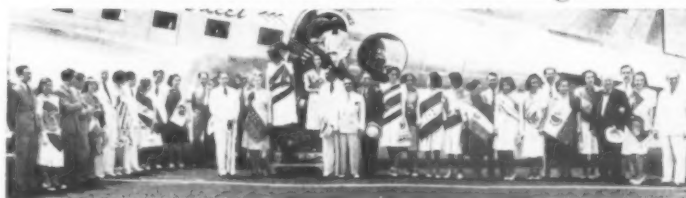
American recently started a new class of stewardesses with an enrollment of 29. Class work is in charge of Hazel Brooks, senior stewardess, and Dudley Rice, asst. supervisor of passenger service, working under the supervision of N. K. Wilson, supervisor of passenger service. Group varies in height from the 5' 10" of Marie Sandifer of Austin, Tex., and Pauline Gilnes of Wewauka, Okla., to Bessie Polk of Mt. Olive, Miss., who is 5' 5".

Mary L. Bullock of Greenwood, S. C., and Josephine E. Sutherland of Bardonia, Ky., have been selected as TWA hostesses to fly the Newark-Kansas City division. TWA has noted that since Katherine Wilson, TWA hostess from Demopolis, Ala., won the title "Miss American Aviation" at the Birmingham Air Carnival several weeks ago, there has been a big influx of applications from nurses living in southern states.

Pilot M. E. "Molly" Small who has been flying for Canadian Airways between Vancouver and Victoria has been appointed to the staff of Imperial Airways Ltd.

J. S. Irvine has become co-test pilot for UAL at central maintenance base in Cheyenne, serving with First Test

South American Girls to Washington



On the 156th birthday anniversary of Simon Bolivar, emancipator of South American peoples, celebrated July 24, Eastern Air Lines flew 19 daughters of various high Pan American officials from Newark to Washington. The girls, pictured above with attaches of the embassies and legations in Washington, attended a reception given by the Venezuelan charge d' affairs, and visited government departments. Draped in the flags of their countries, the girls represented Santo Domingo, Venezuela, Uruguay, Salvador, Cuba, Bolivia, Nicaragua, Ecuador, Costa Rica, Honduras, Argentina, Colombia, Mexico, Panama, Chile, Brazil, Guatemala, Peru and Paraguay. Also to Washington flew members of the Inter-American Escadrille, organization formed in the U. S. consisting of a group of flyers representing each of the American Republics.

Pilot F. L. Wallace, Irvine formerly was a first officer for United in Burbank.

Niece of Paul and Lloyd Waner of baseball renown, Eleanor Waner of Ada, Okla., has been made a Braniff hostess. She is a cousin of O. M. Mosier, former Braniff v.p., now v.p. of AA.

Recent Eastern transfers at Newark: Meteorologist Bill Winchers from Atlanta to Newark, temporary; Pilot E. W. Miles, Washington to Newark; Capt. Nelson Gaunt, Miami to Newark; Capt. Walter Hostettler, Atlanta to Newark; Capt. W. T. Jamieson, Miami to Newark, temporary. The following men have been promoted from Newark couriers to traffic agents. NY city ticket office: J. L. Sheppard, D. W. Cochran, R. H. Edwards, M. H. Kuzyk, Barry Mohun Jr., W. E. Montgomery, L. D. Schwartz. Replacements for above are: H. W. Beardsley, Franklin Bowler, J. T. Cordon, M. P. Gilmore, H. L. Harris, H. F. Hike, T. M. Phetteplace, J. M. Townsend Jr., George Dicks and Joe Kelly have been promoted from pilot to captain. New pilots include Arthur Appelget, D. W. Cole, F. B. Compton, H. N. Harris, J. G. LaVake, E. M. Marshall, A. R. Ricks, H. E. James, D. B. Southard. J. F. Varchol is a new member of the Newark stockroom staff.

American station mgr. at Buffalo, B. F. Warnock has been transferred to Chicago as flight dispatcher in training. John Brooks, asst. station mgr., Buffalo, replaces him. G. W. Hobbs, AA's Huntington station mgr., was appointed asst. Buffalo station mgr., while J. H. Woods, Camden agent and radio-telephone operator, will replace Hobbs at Huntington.

Edmund Schroeder, crew chief at Oakland, has been made chief mechanic for United at Burbank.

New TWA employees are: R. P. Spater, ticket & reservation sales representa-

tive, Pittsburgh; Arthur Steward, manager, foreign & agency dept., Kansas City; L. G. Nauert, reservation sales representative, Pittsburgh.

CAL Appoints Fahrenkamp

Appointment of Lewis K. Fahrenkamp as El Paso station mgr. for Continental Air Lines has been announced by Robert F. Six, CAL president. Fahrenkamp takes the place of Don Davis who was promoted to the position of chief dispatcher for the system. The former has been identified with El Paso aviation activities for 10 years.



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1939

AS COMPARED WITH SAME
PERIOD OF 1938

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CHICAGO & SOUTHERN
Air Lines

Station Manager



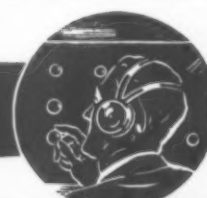
Sam King

Whose characteristic smile makes him a popular member of the Delta Air Lines' organization. He is station manager at Atlanta. (Staff Photo)

Flexible in design—dependable, continuous operation

AIRPORT RADIO RECEIVERS

AVIATION RADIO SECTION, RCA MFG. CO., INC., CAMDEN, N. J. • A SERVICE OF RADIO CORPORATION OF AMERICA



Fortnightly Financial Review

Transair, Timm and Kinner Motors File SEC Stock Registrations

Registration statements covering proposed stock issues by Transair Corp., Timm Aircraft Corp., and Kinner Motors, Inc., representing expected net proceeds of nearly \$1,500,000, were filed with the Securities & Exchange Commission during the fortnight. United Air Lines filed a statement covering a new issue to finance its proposed acquisition of Western Air Express, and Barnard Aviation Equipment Co., Inc., issued a prospectus for an issue expected to net \$60,000. The story of Transair's offering appears on page 10.

Timm Aircraft Corp., Van Nuys, Calif., will issue 425,000 shares of \$1 par common, underwritten by G. Brashears & Co. It has acquired all rights to Howard Hughes' aircraft design No. 1, whose prototype in 1937 set a new transcontinental west-east record of 7-hrs., 31-mins. at average speed of 332 mph. This ship is being ferried from Newark to California by Vance Breese, Timm engineer. Hughes will design at his expense the installation of a Pratt & Whitney Twin Wasp of 1830 displacement, and will guarantee following performances, within 3%, at a gross weight of 5500 lbs.:

High speed at sea level, developing 940 hp, 330 mph; high speed at 10,000 ft., 750-hp., 325-mph; rate of climb at sea level, 750-hp., 2,000-ft. per minute; rate of climb at 9,000 ft., 750-hp., 1700 ft. per minute; high speed at sea level over 3 kilometer course in accord with FAI rules and procedure, 1275-hp., 370-mph.

Net proceeds, \$334,298, will be used to consummate the Hughes contract, totaling \$110,000; for equipment to manufacture Hughes plane, \$43,820; for developing military prototype of the Hughes ship, \$75,000, including cost of jigs, dies, etc.; for working capital, \$104,378.

Firm is designing a 2-place trainer of plastic construction. "It is believed the characteristics of such design will permit variation in the size and horsepower of the engines to be installed." Actual construction has not started. All production rights to the Kinner Sportsters, Models B and K; and the Kinner Sportwing have been acquired, as well.

Officers are Otto Timm, president, director; W. D. Timm, director, secretary-treasurer; R. A. Powell, vice-president, general manager, director. Balance sheet for Apr. 30 shows assets of \$278,231; current assets of \$24,695, cash of \$7,512. Authorized capital stock is 500,000 \$1 par shares; issued are 200,005. Current liabilities are \$26,690. From Jan. 1, 1939, to Apr. 30, net loss was \$15,277.67.

Kinner Motors Corp. statement is for 385,978 \$1-par capital shares, with an aggregate offering price of \$446,215. Of the total, 150,000 shares will be offered the public at \$1.25. Underwriter is G. Brashears & Co. Estimated net proceeds of \$295,029 will be used to repay loans made by the promoters to enable company to complete purchase of assets of Kinner Airplane & Motor Corp., to repay subsequent loans by promoters, to develop a 300 to 400 hp radial engine based on previous Kinner models, to develop a new 160 hp parallel type engine, and to purchase machinery and equipment. Company does not expect to build aircraft, but will continue machine work.

The 160 hp engine, to be air cooled, will have its cylinders grouped around the propeller shaft but parallel to rather than at right angles with the shaft, "thereby allowing the frontal area to be approximately 30% less than that of the smallest radial engine of equivalent horsepower," the SEC is informed. "It is anticipated that maintenance and repairs will be simplified by this type of construction by reason of the comparative accessibility and independence of parts." Inventor is John Braunweider. A full size prototype is under construction.

Officials are B. B. Robinson, president and director; Reese L. Milner, secretary-treasurer; Arthur Lee, vice-president, assistant secretary; G. Brashears, director. There are 2 vacancies on the board. Earl Herring is general manager. Offices are at Glendale, Cal. Balance sheet for Apr. 30 shows assets of \$393,447.74; current assets \$119,643.11; current liabilities \$89,291.14. Net income from Nov. 1, 1938, to Apr. 30, 1939, was \$17,096.03 (red).

Barnard Aviation Equipment Co., Inc., Newark, N. J., prospectus covers 60,000 shares of \$1 par common to be offered public at \$1.65, and underwritten by Steelman & Birkins. Firm will receive \$1.20 a share, net. Net proceeds of \$60,000 from sale of 50,000 shares will be used to take over larger plant and install equipment to increase production and develop additional products. Company designs, engineers and produces machined aircraft accessories, armament parts, and specializes in aircraft control pulleys. Other products are bomb racks, about 30 other aircraft armament items, carburetor type starters, power plant generators, pump units, etc. Sales of military items are made direct to the Army and Navy; commercial agent is Air Associates, Inc., which sells products to airlines and foreign nations. Company's engineers are working closely with military engineers and a number of products are secret. In year ended Sept. 30, 1938, sales were \$264,520, and for 7 months ended Apr. 30, 1939, they were \$130,880. May 1 backlog was \$105,000. Authorized capitalization is 250,000 \$1-par shares; 60,000 shares are outstanding. May 1 balance sheet shows assets of \$155,557 with cash of \$2,307; paid in surplus \$17,647.

Officers are S. Bertrand Barnard, president, director, chief engineer; S. D. Hoffman, secretary, director, sales manager; John J. Mascher, assistant chief engineer; Robert Van Brunt, plant superintendent.

United Air Lines Transport Corp. maximum offering will be 137,027 shares of \$5-par capital stock. As of May 31 there were outstanding 1,499,706 shares. As of July 20 Western Air Express stock outstanding totaled 400,156 \$1-par shares (excluding those issuable in accordance with special purchase plans for employees and management). Upon completion of financing, United states maximum number of authorized shares will be 2,000,000, and maximum number which can be outstanding upon completion of the plan will be 1,637,478. "The plan will not in any manner limit the number of shares of capital stock of \$5 par value of United which may be outstanding," company states.

Financial Statements

American Airlines, Inc., 6 months net profit \$496,097, before Federal income taxes, as against loss of \$151,234 in same 1938 period. Operating revenues were \$4,338,675; passenger, \$1,760,667 from mail; \$189,339 from express; \$110,337 other. Revenue miles, 8,311,751; revenue passengers, 213,594; revenue passenger miles, 83,834,400.

United Airlines Transport Corp., 6 months net loss, \$202,962, comparing with net loss of \$910,701 in same 1938 period. Second quarter figures: net income, \$216,123 (14.4¢ a share), comparing with net loss of \$243,030 in same 1938 period; revenue passenger miles, 37,896,785; total operating revenues, \$3,142,983; net earnings from operations, \$210,048; income from miscellaneous property, interest, etc., \$6,074.

Wright Aeronautical Corp., net profit for quarter ended June 30 was \$1,099,311 after charges, or \$1.83 a share on 599,857 no-par shares. This compares with \$1,081,958 or \$1.80 a share in the 1938 second quarter and \$1,231,735 (\$2.05) for Mar. 31, 1939, period. In 6 months ended June 30, net profit was \$2,331,036 (\$3.88), comparing with \$1,689,246 (\$2.78) in the 1938 half.

Curtiss Wright Corp., shows consolidated net profit of \$1,672,647 after charges for quarter ending June 30, equal after dividend demands on 1,158,464 shares of \$3 non-cumulative class A stock, to 14¢ a share on 7,429,118 \$1-par common shares, comparing with \$1,447,951 (12¢) in the 1938 June quarter and \$1,698,157 (15¢) for Mar. 15, 1939, quarter. Net profit in 6 months ended June 30 was \$3,370,804 (29¢), comparing with \$2,181,862 (14¢) in 1938 half.

National Aviation Corp., net profit for 6 months ended June 30 was \$175,464, including \$181,786 net profit on sales of securities, after charges, comparing with net loss in 1938 half of \$138,285, including \$148,803 net loss on securities sales. There are 477,274 \$5-par shares. Total assets June 30 were \$6,717,943. Paid-in surplus was \$4,139,368, and earned surplus since Jan. 1 was \$56,145.

Celanese Corp., net profit was \$187,057 in quarter ended June 30, (47¢), comparing with \$26,186 (7¢) in June, 1938 period, and \$149,771 (36¢) in March, 1939, period. The 6 months net income for 1939 of \$336,828 (85¢) compared with \$158,249 (40¢) in 1938 half.

(Turn to page 22, col. 3)

Stock Holdings

Following is supplemental summary of transactions and holdings of officers, directors and principal stockholders of corporations with equity securities registered, filed with the SEC Apr. 11 to 30. Unless otherwise indicated transactions were made in March and holdings are as of the end of that month:

Beech Aircraft Corp. common—Charles G. Yankey, officer & director, increased 6,600 to 10,095.

Brewster Aeronautical common warrants—Robert D. Work Jr., director (July 1938), received 1,000 as gift, holding 1,000.

Fairchild Aviation Corp. common—Ernest Robinson, officer, received 120 through exercise of option in Mar. 1936, and sold 176 in that month, acquired 300 in Aug. 1937, 300 in December, 400 in Mar. 1938, sold 500 in Jan. 1939, and acquired 300 in Feb. 1939, holding 800.

Seversky Aircraft Corp. \$1 par common—A. P. De Seversky, officer & director, decreased 2,700, holding 41,015.

Sperry Corp. common vtc.—George N. Armsby, director, decreased 1,400 to 100 in Oct. 1938.

Western Air Express common—L. H. Dwerikotte, officer & director, acquired 377, holding 1,753.

Following is a tabulation of equity holdings filed by persons becoming officers, directors or principal stockholders of issuers having any securities registered. Month covered by report is indicated in each case:

Consolidated Aircraft Corp.—Earle G. Hines, director, none, Mar. 1939.

Continental Motors Corp.—Leslie L. Vivian, director, none, Apr. 1939.

Menasco Mfg. Co.—Victor F. Debrask, officer, none, Feb. 1939.

Seversky Aircraft Corp.—Thomas Davis, officer, none, Dec. 1938.

Wright Aeronautical—Stuart R. Reed, director, none, July 1938.

Harville Offers Common Stock

An offering of 100,000 common shares to finance a new factory and equipment has been announced by Harville Aircraft Die Casting Corp., formerly H. L. Harville, Inc. Underwriters are Fox, Courteney & Castera, Los Angeles.

Patents

2,162,308: Diaphragm Device. Issued to Cletus J. Jenny, East Orange, N. J., assignor to Bendix Aviation Corp., South Bend, Ind.

2,162,514: Engine. Issued to Andre J. Meyer, Grosse Pointe, Mich., assignor to Continental Motors Corp., Detroit, Mich.

2,120: Landing Gear for Aircraft. Issued to Alexander P. de Seversky, New York, N. Y., assignor, by mesne assignments, to Seversky Aircraft Corp.

2,162,794: Rotary Wing Aircraft. Issued to Oscar von Asboth, London, England.

2,162,862: Altitude Control Means for Aircraft. Issued to Armand Protzen, Berlin-Spandau, Germany, assignor to Siemens Apparate und Maschinen Gesellschaft mit beschränkter Haftung, Berlin.

2,162,940: Directional Indication and Control. Issued to Luis de Florez, New York, N. Y., assignor to National Aviation Research Corp., New York.

2,162,956: Aircraft Power Plant. Issued to Alf Lyschmidt, Stockholm, Sweden, assignor to Aktiebolaget Mjö, Stockholm.

2,163,040: Induction System for Internal Combustion Engines. Issued to Enos B. Jacoby, Muskegon, Mich., assignor to Continental Motors Corp., Detroit, Mich.

2,163,114: Student's Control Stick for Airplanes. Issued to James C. Ziegler, Panama, C. Z.

2,163,231: Airplane Winch. Issued to John C. Smaltz, New York, N. Y., and Carl W. Kahler, Newark, N. J., assignors to McKiernan-Terry Corp., New York.

2,163,481: Aircraft Having Rotative Sustaining Means. Issued to Peter Cameron, Kelvinside, Glasgow, Scotland.

2,163,482: Aircraft Having Rotative Sustaining Means. Issued to Peter Cameron, Kelvinside, Glasgow, Scotland.

2,166,154: Parachute Flare. Sargent P. Huff, Chevy Chase, Md.

2,166,182: Load Strip for Airplane Wing and Control Surface Covers. Karl Schmidt, U. S. Navy.

2,166,241: Dual Control Device for Aircraft. Jean Guy Marie Josef de Wouters d'Oplinter, Brussels, Belgium.

2,166,292: Airplane. Randolph F. Hall, Rochester, N. Y.

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HOME OF THE DAWN PATROL

STOCK COMMENTS

Chart Data Supplied by Wyckoff Associates Inc. Comments by Philip P. Friedlander

Without visualizing what transpired in the general marketplace recently, the completed story on aviation stocks cannot be told. Contrary to popular belief the stock market goes up in July and August. It is September and October that the sell-off occurs when high hopes are dashed and the brisk fall trade does not materialize. It seemed that this year July would be an exception. Events abroad cast a gloomy picture for the investor and stocks started on a down-trend. But before a week had elapsed a big rally set in that carried stocks from 129 on the Dow-Jones averages to close to 146 recently witnessed in August. At the moment the market is correcting this advance but there is every reason to believe that this downswing will be short-lived, and that a new buying interest will be courted.

Insistently, it has been pointed out that the averages have been rather slow to reflect what the individual charts on these stocks are showing.

It has been our opinion that the backing and filling movement represented the base-forming stage for a move on the upgrade. Recent market action of the group seems to bear out this thought. In selling off to 35.31 during the week ended August 5th, the averages behaved with technical propriety. It is within the realm of possibility that the averages could retreat to the low established during the week of July 1st, 32.53, but it is highly unlikely that this will occur. Both long term traders and those desiring intermediate commitments will find the aviation group probably one of the best mediums for speculative expression.

Beech to Offer

100,000 Shares

A stock issue of 100,000 shares of \$1-par common by Beech Aircraft Corp. was announced with filing of a registration statement at the Securities & Exchange Commission. Proceeds are to be used essentially as follows: \$100,000 for payment of notes payable to Chase National Bank of New York; \$75,000 for payment of notes payable to W. H. Beech, president, and J. A. Harris, III; \$75,000 for prepayment of three 5% mortgage notes payable to Curtiss-Wright (former owner of the Beech plant), each in amount of \$25,000, and maturing Feb. 12 in 1940, 1941 and 1942; \$50,000 for purchase of tools, machinery and factory equipment. The remainder will be devoted to working capital.

The registration statement reveals that the company employed about 660 on May 31. Backlog on May 31 was \$1,125,000. With present plant personnel, monthly production capacity is placed at 10 single-motored biplanes and 4 twin-engined monoplanes, or 6 biplanes and 6 monoplanes.

Air Associates Inc.

The board of directors of Air Associates Inc. recently declared the regular quarterly dividend of 50c on common stock, payable June 26 to stockholders of record June 19. Board members are Howard Beazley, Gilbert Colgate, H. I. Crow, F. Leroy Hill, Edward Latham, Stephen A. McClellan, Haven B. Page, Roland Palmedo, George B. Post, James B. Taylor Jr. Board reelected the following officers: Gilbert Colgate, chairman of the board; F. Leroy Hill, pres.; H. I. Crow, executive v. p.; R. E. Acre, v. p.; G. S. Kieverstrom, secy.-treas. Haven B. Page, officer since incorporation in 1927, was not reelected but in lieu thereof was appointed Washington counsel of the corporation, with offices in the Hibbs Bldg.

GOVERNMENT CONTRACTS

(Awards of \$10,000 and Over)

Release Date Shown

ENGINES, PARTS, ACCESSORIES

Wright Aeronautical Corp., Paterson, N. J., 7/12, spare parts for engines, \$657,388.10 (War).
Pratt & Whitney Aircraft Div., United Aircraft Corp., E. Hartford, Conn., 7/29, engines, \$680,756.80 (Navy).
Hamilton Standard Propellers Div., United Aircraft Corp., E. Hartford, Conn., 7/29, propeller assy., \$70,135.01 (Navy).
Bendix Products Div., Bendix Aviation Corp., South Bend, Ind., 7/29, \$75,000 (Phila. Aircraft Fac.).
Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J., 7/29, starters, \$14,220 (Phila. Aircraft Fac.).
Weatherhead Co., Cleveland, O., 7/29, bushings, connectors, etc., \$10,320.23 (Phila. Aircraft Fac.).
Wright Aeronautical Corp., Paterson, N. J., 7/29, crankshaft mch. assy., \$19,845 (Phila. Aircraft Fac.).
Wright Aeronautical Corp., Paterson, N. J., 7/29, engines, \$371,269.61 (Navy).
U. S. Gauge Co., New York, N. Y., 7/29, instruments, \$18,150 (Phila. Aircraft Fac.).
Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J., 8/4, starters, \$43,614 (Navy).
Hamilton Standard Propellers Div., United Aircraft Corp., E. Hartford, Conn., 8/5, parts & tools for propellers, \$100,000 (Naval Aircraft Fac.).
Hamilton Standard Propellers Div., United Aircraft Corp., 8/5, propeller assy., \$61,875 (Navy).

MISCELLANEOUS

Modelow Lumber & Bldg. Co., Seattle, Wash., 8/5, wood buildings, \$17,160 (CAA).
Dewey & Almy Chemical Co., Cambridge, Mass., 8/5, pilot balloons, \$19,425 (Agriculture).
Willis & Gelger Inc., New York, N. Y., 7/29, aviator's jackets & suits, \$71,698.01 (Phila. Aircraft Fac.).
Switlik Parachute & Equipment Co., Trenton, N. J., 7/29, parachutes, \$34,300 (Navy).
Michigan Seamless Tube Co., South Lyon, Mich., 7/29, steel tubing, \$11,944.29 (Phila. Aircraft Fac.).
Blaw-Knox Co., Pittsburgh, Pa., 7/29, antenna towers, \$179,900 (CAA).
Telephonics Corp., New York, N. Y., 7/29, headphones, \$18,917.50 (Phila. Aircraft Fac.).
Communication Development Corp., New York, N. Y., 7/29, radio receivers, \$15,852 (CAA).
Bendix Radio Corp., Baltimore, Md., 7/29, telephones, \$21,510.20 (Phila. Aircraft Fac.).
Newport News Shipbuilding & Dry Dock Co., Newport News, Va., 7/29, aircraft carrier, \$31,800,000 (Navy).
Jaeger Watch Co. Inc., New York, N. Y., 8/5, elapsed time clocks, \$13,880 (Navy).
Colonial Beacon Oil Co., New York, N. Y., 8/1, engine fuel, \$12,960 (War).
Humble Oil & Refining Co., Houston, Tex., 7/21, fuel & oil, \$13,500 (War).
Standard Oil Co. (Ky.), Louisville, Ky., 6/22, aircraft fuel, \$69,610 (War).
Standard Oil Co. (La.), New Orleans, La., 6/22, aircraft fuel, \$22,440 (War).
Standard Oil Co. (Cal.), San Francisco, Cal., 6/22, aircraft fuel, \$22,700 (War).
Goodyear-Zeppelin Corp., Akron, O., 6/29, material & services, \$27,762 (Navy).
Standard Oil Co. of N. J., New York, N. Y., 6/26, aircraft fuel, \$332,597.50 (War).
Shell Oil Co. Inc., New York, N. Y., 6/26, aircraft fuel, \$221,523.79 (War).
Socony-Vacuum Oil Co. Inc., New York, N. Y., 6/26, aircraft fuel, \$59,721.12 (War).
Standard Oil Co. (La.), New Orleans, La., 6/26, aircraft fuel, \$204,000 (War).
Shell Oil Co. Inc., St. Louis, Mo., 6/28, aircraft fuel, \$674,834.30 (War).

NEW YORK STOCK EXCHANGE

	Week Ended July 29				Week Ended Aug. 5			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
American Airlines	36 1/4	32 3/4	-2 3/4	8,100	34 1/2	32	-2 1/2	4,300
Aviation Corp.	4 3/4	4 1/4	-1/4	31,400	4 1/2	4	-1/4	13,500
Bendix Aviation	26 3/4	24 1/4	-2 1/2	21,700	26 1/2	24 1/2	-2	13,000
Boeing Airplane	24 3/4	23	-1 3/4	9,400	23 1/2	21 1/2	-2	6,900
Consolidated Aircraft	21 1/2	20 1/2	-1	3,200	20 3/4	19 1/2	-1 1/2	6,600
Continental Motors	27 1/2	25	-2 1/2	13,000	27 1/2	25 1/4	-2 1/4	7,200
Curtiss-Wright	5 3/4	5 1/4	-1/4	22,000	5 3/4	5 1/4	-1/4	17,900
Curtiss-Wright A	25 3/4	25 1/4	-1/4	4,500	25 3/4	25	-1/4	4,400
Douglas Aircraft	73 1/2	70 3/4	-3	10,300	70 1/2	67	-3 1/2	8,200
Eastern Air Lines	19 3/4	18 1/2	-1	9,400	20	18 1/2	-1 1/2	15,200
St.-Cell-O	20 3/4	20	-1/4	1,900	21	19 1/4	-1 3/4	2,100
North L. Martin	30 3/4	34 1/4	+3 3/4	16,400	34 1/4	32 1/4	-2	11,900
Natl. Aviation Corp.	11 1/2	10 1/2	-1	1,600	10 3/4	9 3/4	-1	1,600
N. American Aviation	17 1/2	16	-1 1/2	41,700	17 1/2	16	-1 1/2	20,500
Pan American Airways	15 3/4	13 3/4	-2	4,400	14 3/4	13 1/4	-1 1/2	2,000
Sperry Corp.	45 1/4	43 1/2	-1 1/2	9,000	44 3/4	42 1/4	-2 1/2	7,400
Thompson Products	26 1/2	25	-1 1/2	3,600	25 1/4	24	-1 1/4	1,600
TWA	12 3/4	10 3/4	-2	17,900	11 3/4	10 1/4	-1 1/2	8,400
United Aircraft	39 1/2	37 3/4	-1 3/4	13,600	39 1/4	37 1/4	-2	14,900
United Air Lines	13 1/2	12 3/4	-1/2	23,700	13 1/4	11 3/4	-1 3/4	19,800
Wright Aeronautical	103	101	-2	60	100	98	-2	90

NEW YORK CURB EXCHANGE

	Week Ended July 29				Week Ended Aug. 5			
	High	Low	Net Change	Sales	High	Low	Net Change	Sales
Aero Supply B	3 1/2	3 3/4	+1/4	500	3 3/4	3 1/4	-1/4	900
Air Associates	1 1/2	1 1/4	-1/4	100	1 1/2	1 1/4	-1/4	200
Air Investors Co. pf	1 1/2	1 1/4	-1/4	100	1 1/2	1 1/4	-1/4	200
Air Investors	1 1/2	1 1/4	-1/4	300	1 1/2	1 1/4	-1/4	100
Air Investors War	2 1/2	2 1/4	-1/4	300	2 1/2	2 1/4	-1/4	300
Aviation & Transp.	2 1/2	2 1/4	-1/4	1,900	2 1/2	2 1/4	-1/4	7,300
Beech Aircraft	6 1/2	5 1/4	-1/2	2,100	5 1/4	5 1/4	0	3,200
Bell Aircraft	23 3/4	22	-1 3/4	1,400	22 1/2	20	-2 1/2	3,000
Bellanca Aircraft	8	7 1/4	-3/4	1,800	7 1/2	7	-1/2	1,900
Breeze Corps	4 1/2	4 1/4	-1/4	1,200	4 1/4	4	-1/4	1,400
Brewster Aero	8 1/2	7 3/4	-3/4	3,600	8	7 1/4	-3/4	2,800
Canadian Colonial	7 1/2	7 3/4	+1/4	2,600	7 1/2	6 3/4	-1/4	1,800
Canchild Aviation	12 1/2	11 3/4	-1/2	2,900	12	11	-1	2,000
Grumman Aircraft Eng.	15 1/2	14 3/4	-1/2	2,400	15 1/2	14 3/4	-1/2	3,800
Grumman	18	17 1/2	-1/2	500	17 1/2	17 1/2	0	400
Iring Air Chute	27 1/2	26	-1 1/2	8,300	26 3/4	24 1/4	-1 1/2	6,600
Lockheed Aircraft	10 1/4	9 1/2	-1/4	1,700	9 3/4	9 1/4	-1/4	600
Penn.-Central Airlines	1 1/2	1 1/4	-1/4	100	1 1/2	1 1/4	-1/4	200
Roosevelt Field	4 1/2	4 1/4	-1/4	19,400	4 1/2	4 1/4	-1/4	4,500
Seversky Aircraft	4 1/2	4 1/4	-1/4	300	4 1/2	4 1/4	-1/4	500
Waco Aircraft	4 1/2	4 1/4	-1/4	300	4 1/2	4 1/4	-1/4	500
Western Air Express	4	3 3/4	-1/4	1,600	4 1/2	3 3/4	-1/2	900

RECORD OF SCHEDULED AIRPORT OPERATIONS

	Week Ended July 22				Week Ended July 29			
	Passengers		Transports		Passengers		Transports	
	In	Out	In	Out	In	Out	In	Out
*Burbank	1,234	1,267	251	251	1,146	1,216	251	254
Cleveland	2,222	3,230	170	171	2,282	2,161	170	172
Dallas	1,235	1,274	300	300	1,205	1,296	316	316
**Pittsburgh	1,213	1,275	177	177	1,238	1,258	130	130
San Francisco	981	990	177	177	781	735	130	130

*Burbank figures show TWA, WAE, UAL totals; include no through passengers; revenue passengers only.

**Pittsburgh figures show passengers in and out; no through passengers counted.

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United Orders 28

2-Row P & W Wasps

Placing of a contract for 28 twin-row Wasp engines at a total cost of approximately \$350,000 was announced late in July by United Air Lines. W. A. Patterson, United president, said the engines, ordered from Pratt & Whitney Aircraft Div., United Aircraft Corp., Hartford Conn., would be for replacement of engines in the line's planes. New powerplants will incorporate the new injection carburetor system which has been tested on United's flying laboratory and is now installed on 10 standard Mainliners.

United Air Lines has received CAA approval to extend the overhaul period on its S1CG (Pratt & Whitney) engines from 525 hrs. to 575 hours. This type engine has operated more than 70,000 hrs. in United's service and over 30,000 hrs. since previous extension to 525 hrs. made last fall. During this latter period only one minor mechanical interruption involving an engine part was experienced.

United also announced recently that its entire fleet of 37 Douglas transports were equipped with the latest type feathering propellers at an investment of \$225,000. Blades are manufactured by Hamilton Standard Propeller Div. of United Aircraft Corp. The line's decision to install the hydro-matic props was based on experience with new type blades on the last 10 Douglasses purchased.

Canada Produces 1st Aircraft Engine—Radial Maple Leaf

Said to be the first aircraft engine to be designed and manufactured in Canada from Canadian materials is the Maple Leaf, seven-cylinder radial, recently completed by Canadian Car and Foundry Co. Ltd., Montreal. Known as model R-500, the engine has the following specifications: type—aircooled static radial; bore—4 3/4"; stroke—4 3/4"; piston displacement—500 cu. in.; overall diameter—41 1/2"; dry weight—390 lbs. (estimated); compression ratio—6.5:1; fuel octane—80 minimum; normal rpm.—2,000; bhp. at normal rpm.—175; maximum rpm.—2,300; bhp. at maximum rpm.—200. The Maple Leaf was created in the company's Point St. Charles plant and has passed rigid government tests.

Allison Builds Plant

A new plant being built for Allison Engineering Div. of General Motors Corp. at Indianapolis will have more than a quarter-million sq. ft. floor space and will be devoted to the manufacture and development of liquid-cooled aircraft engines. It is expected to be ready for occupancy by fall. It will be the aviation industry's first completely controlled conditions plant, according to the Austin Co. engineers & builders. Air conditioning, acoustical walls and complete light control will be features of the building.

84 Impedance Units Ordered

Orders for 84 impedance measuring units of the reactance-variation type have been given by the CAA to Washington Institute of Technology, Washington, D. C. Units are portable and will be used for measuring the resistance and reactance of antennas and other apparatus at range stations over the airways system.

Financial Review

(Continued from page 20)

Bendix Aviation Corp., quarter net profit, unaudited, \$1,144,214 after charges (54¢ each on 2,097,663 shares), comparing with \$65,641 (3¢) in June quarter of 1938, and \$1,023,996 (49¢) for Mar. 31, 1939, period. In 6 months, 1939, net income was \$2,168,210 (\$1.03), comparing with net loss of \$495,999 in 1938 half.

Transcontinental & Western Air, Inc., 6 months net loss \$355,867, comparing with net loss of \$671,051 a year ago. Second quarter net profit was \$8,974, comparing with net loss a year ago of \$192,928. Second quarter figures show 25,766,813 revenue passenger miles; 3,030,482 revenue miles flown; passenger revenues \$1,351,416; revenue passengers 41,453; express revenues \$51,555; mail revenues \$595,477; other revenues, \$29,183.

Boeing Airplane Co., 6 months consolidated loss \$183,550 (25.4¢ a share). Backlog on June 30 was \$13,031,646, comparing with \$13,924,652 on Mar. 31. Deliveries in second quarter were \$1,173,042, with new business totaling \$280,036. Gross sales (consolidated) for 6 months were \$3,538,270; cost of sales and operating expenses \$3,590,566, and depreciation was \$75,160, making an operating loss for the period of \$127,455. The 6 month sales figure represented for most part delivery of Pan American Airways' 6 clippers, which were costed out at sales price.

Lockheed Aircraft Corp. reports 6 months deliveries totaling \$12,500,000, new company record, or 145% over previous high of \$5,111,699 for first half of 1938, and compares with sales of \$10,274,503 in all of 1938. Of total sales of 6 months, about \$7,000,000 was represented by May and June deliveries. Company is delivering between 30 and 40 units each month, and employment is over 7,000, with payroll of more than \$1,000,000 a month.

Aviation Corp. and subsidiaries' 6 months net loss was \$1,000,207 after charges, comparing with net profit of \$388,993 for 1938 6 months period.

Waco Aircraft Co., 9 months net loss (ended June 30) was \$835,555 after taxes, etc., comparing with net loss of \$28,305 for 9 months ended June 30, 1938. Sales were \$620,742 in 1939, as compared with \$594,573 in the 1938 period.

Air Investors, Inc., in 6 months ended June 30 reports net income of \$15,227, including \$31,901 net profit on sales of securities, after charges. Valued at July 26 market quotations, net assets were \$999,467, or \$42.34 per share of preferred stock.

Beech Aircraft Corp., announces backlog of \$1,623,876 as of June 30, with June deliveries of \$345,661 setting a record for any month. Loss for 9 months ended June 30 was \$54,986, comparing with loss of \$31,198 in 9 months a year ago.

Interstate Aircraft Engineering Corp., for year ended Apr. 30 reports net loss of \$45,088.85 after all charges. Sales were \$172,462. Total deficit as of Apr. 30 was \$77,564.58. Apr. 30 balance sheet shows current assets of \$57,052.18; current liabilities of \$73,546.72. Total assets were \$305,483.37. Outstanding are 488,950 \$1-par shares.

Lathe Bulletin Issued

Bulletin no. 43 has been issued by South Bend Lathe Works illustrating three new models of the workshop precision lathe and improvements which have been added. Copies are available at Technical Service Dept., South Bend Lathe Works, South Bend, Ind.

Harlow Prepares To Build 50 Planes

Authorization to purchase materials & supplies totaling slightly over \$150,000 and an order to proceed with the immediate construction of 50 all-metal cabin planes has been given the planning dept. of Harlow Aircraft Co., Alhambra, Cal., by the board of directors. Actual deliveries of the four-place Harlow were expected to start soon.

Harlow's factory employment was expected to exceed 100 men, according to Max B. Harlow, v. p. and general mgr. Dave Mendenhall, chief engineer, formerly was with Lockheed and Kinner; Maurice Hoffman, for six years with Vultee, has been placed in charge of planning, while Merrit H. Gray, personnel mgr., formerly was with Curtiss-Wright and later manager of the Miami office of Eastern Air Transport.

Lee Grismer, purchasing agent, formerly occupied similar positions with Western Aviation Supply and Timm Aircraft Corp., and Francis "Tony" Hoffman, factory supt., formerly was a Vultee inspector and later production engineer with Lockheed and Hughes Aircraft. J. Paul Morgan, recently named chief accountant, has been associated with the company for two years.

New Grumman Directors

New directors of Grumman Aircraft Engineering Corp. are William T. Schwendler and B. Allison Gillies, increasing the board's membership from five to seven. Schwendler is chief engineer, having been with the company since its inception in 1930. Gillies is executive mgr., and has been with Grumman for over five years.

25 Coaches in Operation

Twenty-five Cadillac airport coaches recently were placed in operation as feeder transports in Chicago, Detroit and New York. American Airlines owns and operates 12 of the coaches while 13 have been added to Grand Central Cadillac Corp.'s fleet of 32 now serving Newark Airport for all lines in metropolitan New York.

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NOTICE

COMMONWEALTH OF PENNSYLVANIA. By its Secretary of Property and Supplies will receive sealed bids accompanied with required proposal remittance, at Room 178, Capitol, Harrisburg, Pennsylvania, until 10 o'clock A. M. (EST) September 19, 1939, for the sale of Waco ZPFG, 2 place semi-open biplane, Jacobs 285, Instruments. Total ship time 161-55, engine time since overhaul 18-50. Location—Harrisburg Airport, New Cumberland, Pennsylvania. Apply above room for sale list giving general description of this Waco Biplane, and instructions to bidders. COMMONWEALTH reserves the right to accept or reject any or all bids.

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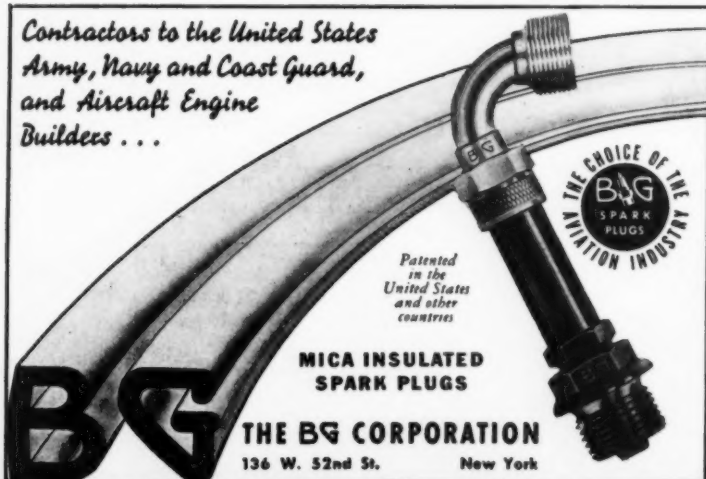
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